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CONTENTS

The Vogue of Science in English Literature, 1600-1800	H. C. Simpson	143
The Royal Ontario and other Museums in Canada	Sir Robt. Falconer	168
The Hard Winter	Edgar McInnis	186
The Mind of Newton	A. S. Eve	191
The Augustan "Mobility"	W. L. MacDonald	200
On Reading Proust	L. A. MacKay	217
Herrick: His Epigrams and Lyrics	M. L. S. Lossing	239

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THE VOGUE OF SCIENCE IN ENGLISH LITERATURE, 1600-1800

H. C. Simpson

THE importance of the study of the natural sciences, so slightly regarded, for the most part, in the older periods of history, has, during the last two centuries, finally impressed itself upon the minds of men. The first stirrings of modern science may be dated with sufficient accuracy from the Renaissance, and it cannot be too often explained that this was an element in Humanism—a return to Greek thought and Greek method. Gilbert and Galileo, Copernicus and Vesalius are the direct spiritual descendants of Thales, Aristarchus, Eratosthenes and Erasistratus.

It is impossible in the limits of this article to do more than mention the most important developments of science in the late sixteenth and early seventeenth century. First came the change in astronomy, from the older theory of a fixed earth to the Copernican system in which the earth is considered as a planet revolving round the sun: we owe this largely to Galileo and Kepler. Next came the great change in physics, which began with Galileo's work on falling bodies and was carried on to the theory of gravitation by Newton. Finally, the discovery of the circulation of the blood was announced by William Harvey on April 17th, 1616, six days before the death of Shakespeare. With this brief statement of principal facts to be kept in mind we can proceed to consider the literature. Before the Restoration of Charles II and the foundation of the Royal Society there are, after Bacon, four seventeenth century writers who deserve some mention: Burton for *The Anatomy of Melancholy* (1621);

Sir Thomas Browne for the *Vulgar Errors* (1646); Bishop Wilkins for various works of which we will speak presently; and Izaac Walton for the *Compleat Angler* of 1653. Milton's *Paradise Lost*, also, though published in 1667, belongs in a scientific sense to an earlier period. Burton is a writer of extraordinarily wide learning and curiosity, but in his work we see that science is still in its early infancy, and a contemporary of Eratosthenes and Archimedes might have been almost as much enlightened in this respect. He holds the ancient Hippocratic doctrine of the humours, and believes that a subtle vapour, the spirit, is the chief instrument of the soul. Of these spirits, he says, there are three kinds, natural, vital and animal, of which the latter, begotten in the brain, are diffused by the nerves, and give sense and motion to the body. This is the Galenic conception, derived from Erasistratus. Burton holds, too, Galen's theory that the pulmonary vein conveys air from the lungs to the heart. He had apparently not heard of the work of Harvey. In astronomy he is further advanced. He is aware of the discoveries of Galileo, refers to Kepler, and criticises Tycho rather shrewdly. He refers to Tycho's proof that the heavens are penetrable, from the fact that the paths of the comets cut the planetary orbits; and he has ceased to believe in the region of empyreal fire above the heavens. He still speaks of the Ptolemaic theory as the most received opinion; yet he shows that he realises its difficulties and is aware of Galileo's discoveries of the nature of the Milky Way and the existence of the moons of Jupiter; in fact, he remarks in a note that he has seen the latter through a telescope. He seems interested, however, in playing with problems rather than hopeful that definite scientific conclusions can really be obtained.

Sir Thomas Browne is a singular mixture of scepticism and credulity. He is a convinced believer in the witch superstition, and still holds the Ptolemaic theory in astronomy. He does not appear to be cognizant of the work of Kepler, nor to appreciate that of Galileo, but he has a certain scientific quality, wide curiosity, caution, commonsense, and willingness to apply the experimental test. He is familiar with Harvey's great discovery of the circulation, and with Gilbert's investigations in electricity and magnetism, and he has evidently checked Gilbert's results by experiments of his own. This last is a noteworthy fact. He looks forward in a way to the work of the Royal Society, though that body would no more have approved of his highly latinized style than of Burton's curious mixture of Latin and English. The new knowledge demanded a new style, and this, as we learn from Sprat, was actually one of the conditions laid down by the Royal Society for its members.

From a scientific point of view, the special interest of Milton's *Paradise Lost* lies in the balance which the poet maintains between the old and the new astronomy. Milton was brought up in the atmosphere of the older theory. His earlier poems contain several allusions to it, and there can be no doubt that in his earlier years he wholly accepted it. In 1638 during his stay in Florence the poet visited Galileo, a visit referred to in the *Areopagitica* of 1644. He refers to the "Tuscan artist" in no less than three passages of his great poem, in one of them by name. Other passages in the poem not only show that Milton was familiar with the new astronomy, but incline one to think that it was more consonant with his reason than the older theory. Still, even if he was a convert to Copernicanism, Milton was too wise to attempt to make it the basis of a poem intended to appeal to a

contemporary reading public. Had he tried to do so the effect would have been bewildering. He sets forth therefore, in his account of the mundane universe, the common Ptolemaic or rather Alphonsine theory of his own day. Especially interesting in this connection is the discussion in Book VIII between Adam and Raphael. Eve, finding the conversation growing philosophical, modestly retires to attend to her flowers, and during her absence the angel entertains Adam with a little sarcasm at the expense of future astronomers. The deity has done well to conceal his secrets, he remarks, and perhaps he aims at amusing himself with the quaint ideas of learned men:

> If they list to try
> Conjecture, he his fabric of the Heavens
> Hath left to their disputes—perhaps to move
> His laughter at their quaint opinions wide
> Hereafter, when they come to model heaven,
> And calculate the stars; how they will wield
> The mighty frame; how build, unbuild, contrive
> To save appearances; how gird the sphere
> With centric and eccentric scribbled o'er,
> Cycle and epicycle, orb in orb.

A little later in the same book, the Copernican theory is set forth, and several of the important discoveries of Galileo are referred to, but the angel wisely declines to decide between the two hypotheses. The advice he gives to Adam is to "solicit not his thoughts with matters hid;"—from the scientific point of view very bad advice!

A writer contemporary with Milton, who shows a decided scientific bent, is John Wilkins, in his day a man of note; husband of Cromwell's sister; Warden of Wadham College, Oxford; Master of Trinity College, Cambridge; Bishop of Chester; first secretary to the Royal Society;

and the author of several books which even to-day are far from being devoid of interest, the *Discovery of a New World* (1638); the *Discourse concerning a New Planet* (1640); and the *Mathematical Magic* (1648). "These works", says Professor Saintsbury, "display in their very titles the survival of the fantastic". This verdict is likely to give a wrong impression of Wilkins, as a man of curious imagination. It is true that the imaginative element is very strong in him, but this is by no means allowed to run riot. As we should expect from his record, Wilkins' writings are distinguished rather by rationality than by fantasy. His book of 1638 is indeed a piece of popular astronomy of the day. It is daring and advanced in its acceptance of the views of Copernicus, Galileo and Kepler, and it has nothing mystical about it. Wilkins is indeed overfond of referring to the scholastic writers, and he accepts, on the authority of Aristotle, the doctrine of the four elements. But, even after Boyle's *Sceptical Chymist* of 1661, we often find this idea, even so late as Akenside and Armstrong, towards the middle of the eighteenth century, and Wilkins is very far from following his earlier authorities without reservation. The difference in the manner of approaching scientific questions which the new spirit was bringing in may well be seen by comparing Wilkins' own arguments with those which he quotes from earlier writers. On the question of the incorruptibility of the heavenly bodies he sets himself in opposition to the authority of Aristotle, and the argument proceeds on reasonable scientific grounds. Equally rational is his way of reasoning in the argument against solid orbs, in that against the existence of an element of fire, against the music of the spheres, and in the proposition that the moon is a "solid, compacted, opacous body". Later science has of course put out of court

Wilkins' belief in the habitability of the moon. He thinks with Galileo and Kepler that the brighter parts represent land, and the darker seas. He also believes that the moon has an atmosphere. Wilkins errs here with the greater men, his masters, and his arguments are rational enough; indeed he gives an admirable reply to Tycho Brahe's argument against the Copernican theory, that it would compel us to assign an incredible distance to the fixed stars. The words "great" and "little", he says, are relative terms. Whales and elephants are not chimaeras, because they so much exceed other creatures in size. There is no certain way, says Wilkins, of finding out the distance of the fixed stars, and they may very well be at an immense distance from us. Indeed, we know to-day that the light of the nearest of them, travelling at 186,000 miles a second, takes more than four years to reach us. In the *Mathematical Magic* Wilkins discusses the possibility of inventing a submarine and a flying machine. He confesses that experiments on flying in the past have not been very successful, but this, he thinks, may be partly due to want of experience; and he makes suggestions for gliding experiments, which were actually carried out in the 19th century by Lilienthal and Pilcher. Dr. Johnson may well have had this passage in mind in his account of the flying artist in *Rasselas*.

Wilkins' prose style is noteworthy for its brevity, clearness and simplicity of structure. A similar clarity is one of the marks of the prose of Abraham Cowley, who was the bishop's contemporary. The excess of the intellectual quality in Cowley rather increases than diminishes his importance from our point of view. In matters scientific he shows a very strong interest. The *Ode upon Dr. Harvey* celebrates the epoch making dis-

covery of the circulation of the blood in an elaborate piece of imagery.

The poem, it must be confessed, is more curious than excellent. Much better, and showing the same scientific enthusiasm, is the *Ode to the Royal Society*, which Cowley composed in 1666 at the suggestion of his friend Evelyn. It was first printed in Sprat's *History of the Royal Society*. One striking feature of the latter Ode is the praise of Bacon as the Moses of the Promised Land of Science. From Bacon the poet turns to the Royal Society as the great pioneer's successors and intellectual heirs. Much, he says, has already been done through the discovery of the telescope and microscope, but greater things remain for the future.

Cowley was one of the earliest members of the Royal Society, and in 1661 he published a *Proposition for the Advancement of Experimental Philosophy*. This is a very sober and matter of fact piece of work. "We do not design this," says the author, "after the model of Solomon's House in my Lord Bacon (which is a project for experiments that can never be experimented), but propose it within such grounds of expense as have often been exceeded by the buildings of private citizens." Cowley desires to found a college for the pursuit of science, and he begins with suggestions concerning the situation, revenue, and staff. In addition to the philosophers themselves and their regular staff of servants, we have "two lungs, or chymical servants", and a library keeper, "who is likewise to be apothecary, druggist, and keeper of instruments, engines, etc." The college is to contain an "anatomy chamber, adorned(!) with skeletons and anatomical pictures, and prepared with all conveniences for dissection; a chamber for all manner of drugs and apothecaries' materials; and a mathematical chamber

furnished with all sorts of mathematical instruments." There is to be an enclosed garden for experiments on plants, and another for "more exact search into the nature of animals, and the improvement of their uses to us." A high tower is to be provided for astronomical purposes, and deep vaults are to be dug for "experiments most proper to such places". The professors are to live in common, to lecture at stated periods upon topics of natural philosophy, to teach by turns in the public schools, and, above all, to undertake scientific research. The results of their investigation are to be announced at intervals to the general assembly, and recorded in the college archives. Every third year the proceedings are to be printed and given to the public.

Cowley's interesting proposition is referred to by Thomas Sprat, Bishop of Rochester, in his *History of the Royal Society*. It is criticized on two grounds: the largeness of the revenue needed, and the proposal to require the professors to undertake the education of youth. In other respects, says Sprat, "this model was very practicable". In certain points it was bettered by actual history; for in some respects the purpose of the college was carried out by the Royal Society, founded shortly afterwards. The history of the society, written by Sprat, appeared in 1667. In this work the modern scientific spirit is clearly marked.

The points most worthy of notice in the book are these:

1. It repudiates, in the name of the Royal Society, all mere authority. It clearly recognizes that all scientific inquiry must be based on observation and experiment.

2. It recognizes the importance of minute fact. Nothing is too small in science to deserve attention. Sprat shrewdly suggests that objections raised against

experiments on the ground of their uncertainty may find an answer in a more minute attention to fact.

3. It emphasizes the cosmopolitanism of science; the necessity for the complete toleration of opinions, however unorthodox; the value of discussion and criticism; and the desirability of spreading the scientific spirit as widely as possible. The Royal Society is "popular" in the best sense of the word. It is open to men of all ranks who can aid in its objects; and the spirit of intellectual pride and love of obscurity receives from it no encouragement. Sprat speaks enthusiastically of the high favour in which the society is held by citizens and by merchants. Such as Cutler, who founded a lectureship in mechanics; by physicians, nobles, statesmen, soldiers, churchmen; and especially by the King. Charles II, it may be remarked, was far ahead of his age in scientific curiosity, a fact which Sir Arthur Shipley puts to the credit of his Medici ancestors.

4. It observes the proper limitations of science, whose province is "the frame of men's bodies, the ways for strong, healthful, and long life; the arts of men's hands—and the works of nature."

5. It insists on the importance of clearness and simplicity of style in all scientific work. This brings the scientific movement into connection with the classical, engaged at this time in a conflict with the conceits and obscurities of the metaphysical poets. Here for once science and the classical spirit meet together as friends and not as enemies!

An interesting short account of the foundation and of the first presidents of the Royal Society is given by Sir Arthur Shipley in an article in the *Quarterly Review* for October, 1925. Pepys was admitted a fellow of the Society in 1665. The great diarist became himself presi-

dent in 1684. He was of course no man of science; he did not even learn the multiplication table until he reached the age of 29; but he was a man of wide curiosity and great powers of organization. Dr. Shipley notes the many curious experiments observed by Pepys at Gresham College: one, illustrating the tenacity of life in a cat, consisted in the placing of a kitling under a receiver and pumping out the air, whereupon the kitling was "killed almost quite, but that we could not quite kill her, with such a way". Other experiments on animals were made with the "Florence poison" (probably, as Dr. Shipley remarks, white arsenic), and trial was attempted of the transfusion of blood. In one of these "a poor and debauched man" that was "a little frantic," had twelve ounces of his blood exchanged for that of a sheep, and oddly enough, so far from being discommoded, the patient stated that he was much benefited by the operation. This result is quite contrary to that we should expect in view of modern research on the effect of bloods of different types upon each other. Perhaps the explanation may be found in the fact that the man was "a little frantic".

On account of the weakness of his sight Pepys was naturally much interested in optical instruments. This appears in several places in his diary. In two of these mentioned by Dr. Shipley, he refers to observations of the moon, and of Jupiter with his satellites.

John Evelyn, also, like Pepys, a member of the Royal Society, was much interested in horticulture, and comments on the value of nitre as a fertilizer. As a diarist, he is inferior to Pepys, and his great work is the "*Sylva*". Another of his writings which deserves mention is that on smoke prevention, The "Fumifugium", lately edited by Dr. Gunther. Evelyn also, like Cowley, drew out a

scheme for a college of science, which may have hastened the incorporation of the Royal Society.

Another member of the Royal Society, who should not be forgotten, is that delightful writer of memoranda, John Aubrey. As Mr. Lytton Strachey remarks in *Portraits in Miniature*, "he was the first English archaeologist, and his most remarkable achievement was the discovery of the hitherto unknown Druidical temple of Avebury." The curious state of knowledge at this time is shown by the fact that Aubrey was a believer in astrology.

It is impossible to refrain from a reference to a delightful piece of literature which preceded by nearly a decade the institution of the Royal Society: Izaak Walton's *Compleat Angler*, published in 1653. In the discourse of the first day we have an allusion to Van Helmont's famous experiment on the increase in weight of a tree, provided with no other nutriment but rain water. Piscator remarks: "You shall find this augment of the tree" (of a hundred pounds) "to be without the diminution of one drachm weight of the earth. Hence they infer this increase of wood to be from water of rain, or from dew, and not to be from any other element. And they affirm also the same may be done in any animal or vegetable." Helmont actually found, that with a tree weighing originally five pounds, the weight at the end of four years, including the weight of leaves which fell, was 169 lbs., 3 oz. The weight of the earth was only 2 oz. short of its previous weight of 200 lbs., so he remarks: "164 lbs. of the roots, leaves, wood, and bark, which constituted the tree, appeared to have sprung from the water alone." This was interpreted as a transmutation of water into the substance of the tree. Helmont died in 1644, and his writings, collected and published by his son, were trans-

lated into English in 1662, nine years after the publication of the *Compleat Angler*, so that Walton must have read or heard an account of the experiment before this translation appeared.

Though well acquainted with Gesner, Walton is credulous of many of the strange stories about animals told by Pliny, Aelian and others, and repeated by Du Bartas. Less surprising is his belief in spontaneous generation, which appears in many passages. At the opening of Chapter XIII, Piscator remarks that most men differ about the breeding of eels; "some say they breed by generation as other fish do, and others, that they breed, as some worms do, of mud; as rats and mice, and many other living creatures are bred in Egypt, by the sun's heat, when it shines upon the overflowing of the river Nilus; or out of the putrefaction of the earth, and divers other ways. But that eels may be bred as some worms, and some kind of bees and wasps are, either of dew, or out of the corruption of the earth, seems to be made probable by the barnacles and young goslings bred by the sun's heat and the rotten planks of an old ship, and hatched of trees; both which are related for truths by Du Bartas and Lobel, and also by our learned Camden, and laborious Gerard, in his Herbal."

The fable of the "barnacle goose", like that of the "lamb plant", was very slow to die. The marvellous life history of the eel was not elucidated till the end of the 19th and the beginning of the present century, when the patient work of a number of biologists showed that the spawning ground of the fish is in the far western Atlantic Ocean, between the West Indies and Bermuda.

Joseph Glanvill is chiefly remembered to-day through Matthew Arnold's poem of the "Scholar Gipsy", and the fact that "Glanvill's book" lay on the grass beside the

poet while his eye "travelled down to Oxford towers" from the slopes beyond Hincksey where once stood the irrecoverable "Signal Elm". But Glanvill deserves to be remembered for himself. Like Browne, he illustrates the way in which the superstitious atmosphere of the seventeenth century could restrain and oppress a naturally rational and even sceptical mind, so that the *Scepsis Scientifica* and the *Saducismus Triumphatus* flow from the same pen. The attack on the "Sadducism" of the disbelievers in the witch superstition contained in the latter book stands by no means alone. More, Cudworth, and notably Boyle, some of the greatest English intellects of the time, share in the delusion. No adequate reply was ever made to Glanvill's attack; but slowly the atmosphere which fostered the belief changed, the superstition gradually faded, and by 1718, for the most part and so far as cultivated men were concerned, it was dead. Glanvill is of particular importance to us on account of his interest in things scientific, an interest which seems to us so much at variance with his writings on witchcraft. One of his most important writings is the *Plus Ultra* (1668) an admirable summary of the work done in science up to and including his own time. Glanvill refers particularly to the inventions of the telescope, microscope, thermometer, barometer, and air pump, and the discoveries which have been made by their assistance. The Royal Society has a chapter to itself, and an earlier book of Glanvill's, the *Scepsis Scientifica* of 1665 has also an address to the Royal Society prefixed to the volume. The author speaks of this body with the utmost enthusiasm. Two chapters of *Plus Ultra*, again, are devoted to the work of "the illustrious Mr. Boyle". It is rather remarkable, however, that there is no clear reference to Boyle's greatest discovery, the important law known by his name.

It seems almost incredible to us to-day that the work of the Royal Society could be opposed on the grounds of good order and religion, but so it was. "Boyle" says Dr. Thorpe "was earnestly solicited to leave the society." "I beseech you, sir," writes one of his correspondents, "consider the mischief it hath occasioned in this once flourishing kingdom, and if you have any sense, not only of the glory and religion, but even of the being of your native country, abandon that constitution." The writer, Henry Stubbe, attributes all the debauchery of the gentry of England to the evil influence of science. He attacked Glanvill for writing in defence of the scientific men, and it is one of the ironies of fate that Glanvill should have been called upon to preach his funeral sermon. This, unfortunately, has not come down to us. "Let us hope", says Dr. Thorpe, "that Glanvill saw in it a grand opportunity for holding his tongue."

We have now reached the period of Newton and Leibnitz, from whose work the thought of the eighteenth century takes its main direction. The idea of the theory of gravitation, and the law of inverse squares, seems to have originated in Newton's mind as early as 1666. It was then abandoned on investigation, as inconsistent with the facts. After Picard's new determination of the earth's radius, communicated to the Royal Society in 1682, however, the problem was reopened and the solution found. Newton communicated his discovery to Halley in 1684, and his paper was read to the Royal Society in 1685. His great work, the *Principia*, was composed in 1685-6 and published in 1687. Not long after Newton's discovery of the calculus, which is there employed, Leibnitz was working along similar lines. From the work of these two thinkers we may date what Dr. Merz calls the "astronomical view" of nature current in the

eighteenth century. According to this the universe presents itself as a problem of masses, forces, and empty space.

We now arrive at a point where the New Science, new in achievement, though in its spirit as old as Aristarchus and Archimedes, has won the general recognition of the learned world. Roger Bacon had been imprisoned. Galileo had been silenced. Descartes had trembled, and for a time refrained from publishing his *System of the World*. When he finally ventured, the book was placed on the index. But Newton was not subjected to serious ecclesiastical attack. The attitude of such men as Stubbe now became uncommon. Newton lived in a country where science had won her freedom. The Anglican Church was tolerant of the new knowledge. The English man of science had not to fear either the Inquisition or the enthusiasm of fanatical reformers, though he had for long to endure the zeal of bibliolaters and literalists. It was moreover clearly understood at last that science does not pretend to give any final explanation of the facts of nature. This important limitation, according to Dr. Merz, was not made by Descartes: it was probably first insisted on by Leibnitz, but "the first practical instance of this important distinction is really to be found in Newton's philosophy". Newtonian ideas appear in English literature in the work of James Thomson, the author of the *Seasons*. Here, especially in *Autumn*, the poet's scientific bent is frequently seen; but the influence of Newton upon his thought is shown still more directly and strikingly in his poem entitled *To the Memory of Sir Isaac Newton*. Newton died on March 20th, 1727, and the commemorative verses appeared in the following June. Thomson applauds Newton's genius, and especially his great discovery of the

law of gravitation, and he notices at some length his investigations of the tides and the phenomena of sound and light.

With the growth of the eighteenth century the discoveries of Newton, and the idea of universal law, gradually permeated the general thought of the world. While it would be absurd to maintain that the idea of natural order was originated by seventeenth century science, it was undoubtedly emphasized and made prominent by the work of Galileo and Newton. In the *Essay on Man* (1732-4) Pope, whose essentially shallow mind was receptive to all the seeds of philosophy and pseudo-philosophy scattered by Bolingbroke, confuses the scientific conception of order with the metaphysical idea of the chain of nature, from which

> Whatever link you strike,
> Tenth, or ten thousandth, breaks the chain alike.

If this chain were broken, says Pope, a disruption of the universe into chaos would ensue:

> Earth unbalanced from her orbit fly
> Planets and suns run lawless through the sky.
>
> * * * * *
>
> Heav'n's whole foundations to their centre nod,
> And nature tremble to the throne of God.

This is not science, but bad metaphysics. Pope's chain of nature is linked to necessity, and scientific law has no sense of necessity. As Huxley said in the nineteenth century: "Fact I know; and Law I know; but what is this Necessity, save an empty shadow of my own mind's throwing".

"Nature's chain", in Pope's poem, is identical with the "vast chain of being", stretching, through man, from nothing to the infinite. This theory, which has long been

relegated to the lumber room of science and philosophy, is referred to in two places in the first epistle. The idea is found in Locke, and Elwin remarks that Bolingbroke copied Locke, and Pope copied Bolingbroke. The doctrine also occurs in Thomson, Young and Akenside. Pope's use of it is childish. The truth of the dogmatic statement that every link in nature's chain is essential to the order and coherency of the universe is certainly not obvious. "It is not apparent," says Elwin, "that the extinction of the flea would upset the universe." Moreover, the theory has been amply disproved by later science. In the course of geological ages all sorts of creatures, such as the pterodactyl and ichthyosaurus, have disappeared from the world of living things, without in the least endangering the order of the universe. The theory of the "chain of beings", with its deterministic implication, goes back to the Stoics, but, according to Mark Pattison, it was Leibnitz who caused it to be generally adopted in the eighteenth century. The theory had been reinforced, not long before Pope's day, by the microscopical investigations of Swammerdam and Leeuwenhoek, and it was further strengthened by the Réaumur, Bonnet, Trembley, and others. The theory culminated, says Huxley, "in the doctrine of the 'échelle des etres', so powerfully and clearly stated by Bonnet." "In the then state of knowledge," continues Huxley, "it appeared that all the species of animals and plants could be arranged in one series; in such a manner that, by insensible gradations, the mineral passed into the plant, the plant into the polype, the polype into the worm, and so, through gradually higher forms of life, to man, at the summit of the animated world."

But, as knowledge advanced, the conception ceased to be tenable in the crude form in which it was first put

forward, and the idea of the "ladder" had to be replaced by that of a "tree".

Another passage in the *Essay on Man*, which shows the influence of the new science, comes near the beginning of *Epistle II*:

> Go, wondrous creature! mount where science guides,
> Go, measure earth, weigh air, and state the tides;
> Instruct the planets in what orbs to run,
> Correct old Time, and regulate the sun;

The weighing of the air may be said to have been achieved by the work of Torricelli and Boyle. The correct measurement of the earth's circumference had been announced to the Royal Society by Picard in 1682. Newton, who had previously worked at his gravitational theory on an incorrect value for the earth's radius, finding the result calculated from his hypothesis inconsistent with the facts, had for some years laid his work on one side. He was present on the occasion of the reading of Picard's paper, and going through his calculations afresh in accordance with the new data, found a complete correspondence between fact and theory. With regard to the tides, again, the true theory was first set forth by Newton, who explained the phenomena as the result of the combined influence of the gravitational pulls of the sun and the moon. Newton is indeed referred to by Pope a few lines further down:

> Superior beings when of late they saw
> A mortal man unfold all nature's law,
> Admir'd such wisdom in an earthly shape,
> And shew'd a Newton as we shew an ape.

Could he, whose rules the rapid comet bind,
Describe or fix one movement of his mind?
Who saw its fires here rise, and there descend,
Explain his own beginning, or his end.

It is difficult to say whether in this passage Pope means to be complimentary or the reverse, whether Newton is to be regarded as admirable or grotesque; and though in the familiar couplet

NATURE, and Nature's laws, lay hid in night:
God said, Let Newton be! and all was light,

there is no mistaking the note, yet Pope, like Swift, is somewhat supercilious in his attitude to science. The reference to Newton and the comets parallels a passage from Thomson. The great name we to-day associate with the comets is rather that of Edmund Halley than of Isaac Newton. The latter was sceptical of the theory that the paths of some of the comets might be elliptical, and the first actually to predict the return of a comet was Halley. He has given his name to the comet whose return he foretold for 1758 (it actually returned the next year), and whose last appearance was in 1910. It was Halley's comet which startled Harold's men before the battle of Hastings, as recorded in the Bayeux tapestry.

At the beginning of the eighteenth century there springs into prominent notice the attitude to scientific development of the wit and the man of fashion. The most striking examples of this appear in the periodical literature of the period. The wit and the beau naturally looked upon scientific study as the superemely silly amusement of a few crazy enthusiasts. In 1690 Sir William Temple can still find courage to ask: "What are the sciences wherein we pretend to excel" (the ancients)? I know of

no new philosophers who have made entries upon that noble stage for fifteen hundred years past, unless Descartes or Hobbs should pretend to it. . .There is nothing new in astronomy to vie with the ancients, unless it be the Copernican system; nor in Physic, unless Harvey's circulation of the blood. But whether either of these be modern discoveries, or derived from old fountains, is disputed: nay, it is so too whether they are true or no; for though reason may seem to favour them more than the contrary opinions, yet sense can very hardly allow them; and to satisfy mankind, both these must concur. But if they are true, yet these two great discoveries have made no change in the conclusions of Astronomy, nor in the practice of Physic, and so have been of little use to the world, though perhaps of much honour to the authors." So blind to the signs of the times is it possible for the man of rank and cultivation still to be! In the *Rape of the Lock* Pope sneers at the scientific man and the antiquarian alike, and Swift pours out upon the natural philosophers the vials of his amused contempt in the famous voyage of Gulliver to Laputa. Even later than this, in the flying artist and the mad astronomer of Johnson's *Rasselas*, we have a similar satirical attitude, as we have also in several essays in the "Rambler".

All this is nothing but the natural reaction from the exuberant optimism of the Elizabethan period. To the enthusiasm of Bacon, who thought the scientific millennium was close at hand, succeeded a certain spirit of cynical disillusionment. "There is nothing new under the sun." This is illustrated by the character and periodical writers of the seventeenth and eighteenth centuries, and it appears especially in their treatment of the *virtuoso*, the scientific dilettante or enthusiast, who flourished at this time. The very prevalence of the

virtuoso, however, as one of the chief butts of the humorous writers of the period, is an evidence of the widening scientific interest, without which the parody would lose its point and the satire its edge. One of the difficulties of the investigation of this subject is to disentangle the direct scientific influence from other more general influences working in a similar direction. The Renaissance was, as we have seen, an enfranchisement of the reason, one of the results of which is the development of science. But the movement had other results than this. It is often difficult to say how far certain phenomena—such as the disappearance of the witch superstition—are due to direct scientific influence, and how far to rationalism apart from science. In some cases the two work in a directly contrary direction. Science, says Huxley, is "organized common-sense", but, unfortunately, common-sense is too often merely another phrase for common ignorance. Common-sense, for example, says that the sun goes round the earth, and scorns the fantastic idea that it is the earth which moves. It was common-sense which led to Dr. Johnson's preposterous refutation of Berkeley by the kicking of a stone. A similar application of common-sense is at the root of the ridicule of scientific curiosity which we find so prevalent in the eighteenth century. "Common-sense" is far too ready to generalize from insufficient data. It does not appreciate the importance of minute fact, or the difficulties in the way of ascertaining minute fact. It was indeed some time before the world realized that, to quote from Dr. Johnson, "What is said by the chemists of their darling mercury, is, perhaps, true of every body through the whole creation, that, if a thousand lives should be spent upon it, all its properties would not be found out" (*Rambler* No. 5).

During the seventeenth and eighteenth centuries the rationalistic element in thought brought about the development of neo-classicism, in which the reason is supreme, and imagination retires into the background. We note the growing dislike of "enthusiasm", a dislike accentuated by the political reaction from the fanatical excesses of the Puritan régime. This dislike appears in the work of scientific writers and of those who sympathize with them, like Glanvill; but it appears, also, curiously enough, in the attitude of the "wits" and the men of letters to the scientific men themselves. To the neo-classical and rational type of mind, to those influenced by Boileau and Hobbes, science is objectionable on two counts: because it is trivial and ridiculous; and because it is fantastic and romantic! We have seen that, before science could really advance, an accumulation of trustworthy facts was necessary. One of the chief reasons for the errors of early science was too hasty generalization from an insufficient basis of fact. Yet many of these facts, regarded by themselves, seemed highly unimportant. It was only very slowly that their true value was realized. Accordingly, we find much satire upon the triviality of scientific investigation throughout the lighter writings of the eighteenth century. The scientific men themselves were not altogether free from the feeling that "the proper study of mankind is man", and that everything external to man is of comparatively small importance.

In the middle of the eighteenth century we find Dr. Johnson writing: "When a man employs himself upon remote and unnecessary subjects, and wastes his life upon questions which cannot be resolved, and of which the solution would conduce very little to the advancement of happiness; when he lavishes his hours in calculating the

weight of the terraqueous globe, or in adjusting successive systems of worlds beyond the reach of the telescope; he may be very properly recalled from his excursions by this precept, and reminded, that there is a nearer being with which it is his duty to be more acquainted: and from which his attention has been hitherto withheld by studies, to which he has no other motive than vanity or curiosity."

The religious aspect of the question is expressly reserved by Johnson for a future paper, which was never written. The Evangelical point of view is given by Cowper. The third book of *The Task* was published in 1785, at the time of the great dispute between the "Neptunists" and the "Vulcanists" in geology. Hutton's *Theory of the Earth*, which established modern ideas in geology, did not appear until 1795, but his original papers were read before the Royal Society of Edinburgh in 1785. The poet laughs at the "sober dreamers, grave and wise, and pregnant with discoveries new and rare", who

> Drill and bore
> The solid earth, and from the strata there
> Extract a register, by which we learn
> That he who made it and revealed its date
> To Moses, was mistaken in its age.

Cowper is referring to the date of the Creation given by Ussher's chronology—4004 B.C.—a preposterous date according to the findings not only of geology but even of archaeology!

> Some, more acute and more industrious still,
> Contrive creation; travel nature up
> To the sharp peak of her sublimest heights,
> And tell us whence the stars; why some are fixed,

And planetary some; what gave them first
Rotation, from what fountain flowed their light.
Great contest follows, and much learned dust
Involves the combatants, each claiming truth,
And truth disclaiming both. And thus they spend
The little wick of life's poor shallow lamp
In playing tricks with nature, giving laws
To distant worlds, and trifling in their own.

* * * * *

Ah, what is life thus spent? and what are they
But frantic who thus spend it? all for smoke—
Eternity for bubbles proves at last
A senseless bargain. When I see such games
Played by the creatures of a Power who swears
That he will judge the earth, and call the fool
To a sharp reckoning that has lived in vain,
And when I weigh this seeming wisdom well,
And prove it in the infallible result
So hollow and so false—I feel my heart
Dissolve in pity, and account the learned,
If this be learning, most of all deceived.
Great crimes alarm the conscience, but it sleeps
While thoughtful man is plausibly amused.
Defend me therefore, *common sense*, say I,
From reveries so airy, from the toil
Of dropping buckets into empty wells,
And growing old in drawing nothing up."

The milder orthodoxy of Dr. Johnson would not have led him into this vehemence of rebuke. Here the dogmatic Tory High Churchman is more liberal-minded than the gentle Evangelical poet. Johnson's condemnation of the virtuoso is based only on the ground that there are worthier aims in life than the pursuit of hobbies. He does

not intend to condemn the scientific man proper: though it must be protested that the determination of the density of the earth is not a merely trifling matter: and he regards the amusements even of the virtuoso as harmless, up to a certain point. So long as the latter does not forget the main duties of life, his occupation would appear to the Doctor as unworthy of severe censure.

Much more might be said upon the subject of this essay, especially with regard to the treatment of the "virtuoso". Even in the early nineteenth century the old contemptuous attitude to science is sometimes found. A striking example of this appears in the work of Dickens. Mr. Pickwick begins his career as a "virtuoso". He investigates the source of the Hampstead ponds, presides over a learned society, before which he sets forth his famous "tittlebat" theory, and wins immortal fame by digging up a stone inscribed with the mystic characters: "BIL STUMPS HIS MARK". In the "Mudfog" papers, again, in a somewhat clumsy imitation of the eighteenth century wit, Dickens scoffs at the work of the "Mudfog Association for the Advancement of Everything", and satirizes the scientific men under the titles of Professors Snore, Doze, Wheezy, Rummun, Pumpkinskull etc. In such work Dickens is the last important member of a dynasty which long reigned in our lighter literature, of which the greatest representative is Jonathan Swift.

THE ROYAL ONTARIO AND OTHER MUSEUMS IN CANADA

Sir Robert Falconer

THE new and renovated galleries of the Royal Ontario Museums in Toronto will soon be opened to the public. It is therefore timely that attention should now be drawn to the phase of the intellectual life of Canada which they illustrate, all the more so because in October, 1932, there appeared *A Report on the Museums of Canada* made by Sir Henry A. Miers, F.R.S., and Mr. S. F. Markham of England for the Carnegie Corporation of New York. But consideration of the subject must, by reason of limitation of space, be confined to museums in the narrower use of the term, that is to say public museums devoted to natural history, archaeology, ethnology, the fine and the applied arts. Departmental university museums, archives and picture galleries will be excluded.

Sir Henry Miers, who is a trustee of the British Museum, has in recent years spent much time investigating the national and public museums of Britain. This recent report will therefore be read in Canada by those interested with careful attention. In it our deficiencies are more obvious than our accomplishments: "Taking Canada as a unit, it is a most extraordinary fact that less is spent upon the whole group of 125 museums than is spent upon one of the great museums in Great Britain, Germany, or the United States" (p. 29); "Our firm belief is that Canada will never acquire a museum service worthy of her position as a leading nation until she spends at least as much on her museums as the leading

cities of north-west Europe or the United States, and has the courage to appoint first-class curators at first-class salaries to at least 90 out of her 125 museums" (p. 63); "There is an almost complete absence of those municipal museums which are such a feature of European museum development" (p. 27); "Taken as a whole, the Dominion provides little to cultivate the appreciation of fine art, and it is a deplorable fact that so many cities of considerable size have nothing to show" (p. 18). But there is much besides criticism in the report: "The museums in Canada and the problems which they involve cannot properly be understood unless it is realised that Canada has not been very long in the collectors' field, that her educational museums are embryonic, and that her museum endowments are negligible. If these points are borne in mind, one is bound to feel the utmost admiration for what has been accomplished against almost insuperable odds by a few enthusiastic individuals" (p. 8).

Moreover we are not solitary in our deficiencies. We may take both encouragement and warning from the report which Sir Henry made in 1928 to the Carnegie United Kingdom Trustees on *The Public Museums of the British Isles*: "To put it bluntly, most people in this country do not really care for museums or believe in them; they have not hitherto played a sufficiently important part in the life of the community to make ordinary folk realise what they can do" (p. 80). Also in the *Interim Report of the Royal Commission on National Museums & Galleries*, of which Viscount D'Abernon was chairman, issued in 1928, these words are used: "The National Museums and Galleries have for long been treated as the Cinderella of the Social Services. Taking into account the change in the value of money, the cost of these Institutions has hardly increased during the period of an

entire generation. The whirligig of time has curiously revenged itself upon them. They began by being the first educational institutions which the Government thought proper to assist. They are now the last" (p. 28).

Comparisons, however, with Britain, and even with our immensely rich neighbour, need not be taken too seriously. Our tremendous geographical handicaps have made our governmental and transportation problems far more burdensome than those which most countries of our age have had to carry. Our scattered population had to struggle for decades to establish and sustain schools, colleges, and universities; but even in those days of penury far sighted men laid the foundations of museums. Hitherto Canada has had few persons with accumulated wealth from whom help for museums might be expected, and provincial governments in Ontario and the West have regarded the universities as a prior responsibility, though the Royal Ontario Museums testify to the vision of leaders of the Legislature of this Province.

In recent years the museum idea has undergone great transformation and expansion, and with changes in the methods of education it has come to be recognised that well arranged museums are an important factor in the higher life of the people: "Without them the educational fabric of the State would be quite incomplete. To the scholar they afford the indispensable material for study in almost every domain of learning, to the artist inspiration, and to industry the resources of science. To the schoolchild they present the outward and visible explanation of what he has been taught in books. To the general public they offer edification and instruction" (*Royal Commission, Interim Report*, p. 28).

The modern museum is traceable to the impulse that came from the Revival of Learning, for though the word

was used of the foundation in Alexandria, "without which we should not recognize our civilization", as Professor Bury wrote, yet only a small part of Ptolemy's Museum was what we think of when we use the name. In Europe it was not until the seventeenth century that, through the awakening spirit of enquiry, men began to collect objects of art and natural history. Though Italy gave powerful impulse to the Renaissance, England was and has continued to be in the lead in the Museum movement. Sir Frederic Kenyon sees in this activity an expression of English characteristics, one the individualistic habit of collecting and the other the custom of travelling. The houses of many of the nobility were filled with rich treasures; and, of even greater consequence, the private collections of Elias Ashmole and Sir Hans Sloane led to the establishment in Oxford in 1679 of the Ashmolean Museum, and in London in 1753 of the British Museum. Moreover in the nineteenth century Darwin's theory, based on results of his own voyage and other explorations, stimulated museum development. "The richest period of museum development was perhaps the forty years, 1880-1920; of the public museums started during that period nearly one-half have originated from private collections, and about one-third from the spontaneous action of the corporation or a group of citizens.... Only recently—and chiefly in the twentieth century—has an attempt been made to break away from the collecting bias and to establish museums for public rather than personal purposes, and with reference to educational needs" (Miers, *Public Museums of British Isles*, p. 10).

As expected, the antiquarian and the amateur played a large part alongside the scientist in building up museums in the United States. The Museum of the Academy of Natural Sciences of Philadelphia established

in 1812 was the first public natural history museum. In New York the American Museum of Natural History dates back to 1817, but entered on its great career after the fire in 1866 in which most of its valuable collections were destroyed. The National Museum at Washington originated in the magnificent bequest of an Englishman, James Smithson, accepted by Congress in 1846, and it has become one of the leading institutions of its kind in the world. The renowned university museums of Harvard and Yale owe their origin and character to eminent scientists of their country and age—Agassiz, Silliman, Marsh, Dana. More recently vast private wealth has made possible the creation of the Carnegie Institute in Pittsburg and the Field Museum of Natural History in Chicago. There are also the Boston Museum of Fine Arts, and the great city museums of Detroit and Cleveland. While in the fine arts the American museums do not rival those of Europe, those devoted to the natural sciences rank among the best in the world. Our neighbours have spent lavishly on museums, realizing that in them they are promoting continuity for their derived civilization with its past, and in addition are interpreting the character and history of their own environment.

By comparison Canada makes a poor showing. But we have had outstanding scientists and collectors who laid good foundations. To begin with the National Museum at Ottawa. It originated from the impulse of one man of power, Sir William Edmund Logan, the first Director of the Geological Survey of Canada and the Father of Canadian science. He was born in Montreal on April 20, 1798, and got his early education in its schools, but at the age of sixteen he was sent to Edinburgh, and did not return to make his home in Canada until 1843 when he became the founder of the Geological Survey.

ROYAL ONTARIO MUSEUM: EAST FRONT

With dauntless courage and heroic patience he paddled his way up stream, though poverty and indifference made the going hard and at times threatened to wreck his frail bark. In 1845 he received from the Canadian Government official authorization to undertake museum work, but for years he had to put up with miserable accommodation in Montreal for his collections. In 1852 he wrote: "It may be a consideration whether a growing country like Canada could not afford to anticipate what its future importance may require in the nature of a national museum and at some future time not far distant erect an appropriate edifice specially planned for the purpose." Eighty years later this wealthy Dominion has not yet adequately fulfilled that aspiration. Logan resigned his position as Director in 1869 but lived until June, 1875. Canada has been fortunate in that the ideals for her great accomplishment in Geology and other natural sciences were set for her by this native son, who stood so high among his contemporaries.

Powerful stimulus was given to the scientific investigation of the natural resources of the country by the opening up after Confederation of the "Great Lone Land" and of British Columbia. By such men as Selwyn, Macoun, the younger Dawson and their successors and other intrepid explorers, some of them happily still alive, the character of the country has been scientifically described, and great collections of material gathered on periodic expeditions have been deposited in what was for some years officially designated the Museum of the Geological and Natural History Survey. From time to time the Museum has been enlarged by the addition of special departments in mineralogy, palaeontology, botany, zoology, and anthropology; but its progress has been slow. Years ago Sir Edmund Walker, among others, emphasised

the need of a worthy building to house its comprehensive collections: "We are rich enough to bear the cost with ease, but we are not intelligent enough to see our own interest in spending the money." By 1911 a new structure was completed which was expected to be "a complete natural history museum", but then came the War, and the loss of the Parliament Buildings by fire on February 3, 1916 led to the occupation of a large portion of the Victoria Memorial Museum, as it was designated, by the Parliament of Canada.

To-day one fourth of the space is assigned to the National Art Gallery, and of the remainder so much is used by the administrative offices of the Department of Mines and by the Geological Survey, that what is left is insufficient for the purposes of such a Natural History Museum as Canada should have. The collecting of material has cost the country very little, as it has been done mostly through the Geological Survey, but if proper value is to be received it must be dealt with in greatly enlarged laboratories and store-rooms. Addressing the Royal Society in 1923 Professor McMurrich said: "We have all the requisites for a good National Museum except a suitable and adequate home for it and a definite organization for its maintenance." The Carnegie Commissioners also report that "the Museum of Natural History although it possesses a vast amount of fine material, much of which is well displayed in spite of inadequate space, does little to extend its influence beyond the city except in the matter of geological and mineralogical specimens" (p. 37). The responsibility for this comparatively ineffective service is largely due to the nature of its administration, which is "completely anomalous and unlike that of any other great museum with which we are familiar" (p. 25).

The time is surely long over-due for such support for

our National Museum as will make it worthy of the scientific life of the Dominion. It embodies the results of the work of some of our greatest Canadians, whose names are held in high honour by the world of science, but that work should be honoured at home also by being perpetuated in adequate availability, and by provision being made for more comprehensive extension on that foundation by their successors.

Chronologically McGill University was the leader in Canada in museum equipment. Sir William Dawson established its scientific tradition, and under his influence the Peter Redpath Museum was housed in a beautiful building in 1882, which became not only the outstanding example for Canada, but was one of the finest for its purpose on the continent. It contains Dawson's palaeontological collections and has received important mineralogical and zoological additions; but it is recognized that one of the necessary tasks of McGill is to re-condition this famous museum in accordance with modern requirements.

The McCord Museum was presented to McGill University in 1919. It is "a magnificent nucleus for a great historical museum", containing comprehensive Indian material and "a large number of priceless objects and valuable documents" illustrating the French Régime, the Conquest of Quebec, the War of 1812 and other periods; but the building is not fire-proof and the material should be re-arranged.

The earnestness with which the McGill Governors are facing their situation is shown by the fact that in 1932 they had Mr. Cyril Fox, F.S.A., Director of the National Museum of Wales, undertake a survey of their museums and libraries. His report, doubtless, will stimulate the friends of McGill to do for her, as soon as financial con-

ditions improve, what is in keeping with her past and worthy of the ideals which she cherishes for the future.

To deal with the museums of French-speaking Canada, fitting as they do into the educational life of that Province, is beyond the scope of this article; suffice it to quote the words of the Carnegie report: "Most of the colleges and seminaries administered by religious orders in the province have a museum, which indicates a widespread appreciation of the value of museums as aids to education. At the same time, it must be admitted that the technical standard of these is not high, since the expenditure is nominal, the curatorship is honorary, and few of the curators have any special qualifications for the work" (p. 5). In Laval University there have been for more than a century representative collections in mineralogy and other branches of natural science, and it may be expected that the rising school of younger French-Canadian scientists will soon make their influence felt in modern museum development.

As to the Maritime Provinces, the Commissioners report that "the only bright spots are the new museum at St. John, the Archives at Halifax, and the Provincial Museum at Halifax" (p. 6). The Provincial Museum of Nova Scotia though founded in 1868, had its nucleus in collections begun in 1832 by the Halifax Mechanics Institute. It is intended primarily to illustrate the natural resources and the development of the Arts and Industry of the Province. Though catalogued and labelled the collections are so overcrowded that they are not properly available to the public nor safeguarded from fire. They need to be housed in a new building and kept up-to-date. In Dalhousie University, besides good teaching materials, there are for exhibition the McCulloch collection of native birds, some 550 specimens, and a Marine Museum illustrating the era of wooden ship-building. "The new

museum at St. John, New Brunswick, has been designed to fulfil public wants, and will not be overburdened with large collections displayed without educational purposes" (p. 6).

Considering the heavy demands made on the Prairie Provinces for the establishment of educational institutions of all kinds in a short period, it is not surprising that the Commissioners report that "comparatively little has been done by the provincial governments or the municipalities to provide a museum service" (p. 3). In Alberta, however, there are good collections of minerals and of Red Deer River fossils.

In British Columbia the Provincial Museum in Victoria, opened in 1886, is primarily a natural history museum, with a small but good ethnological collection, acquired through the enthusiasm of the late Dr. Newcombe, strictly limited to material from the Province, but representative and chosen with attention to artistic merit.

The opening of the renovated and enlarged building for the Royal Ontario Museums will, it is hoped, inaugurate a new era in appreciation of the scientific, historical and artistic activities which they illustrate. For some years their importance has been recognized, and now the Carnegie commissioners state that "the new extensions render fair to make this one of the largest museums on the American continent", and "it performs very fully the offices both of a university and a public museum" (pp. 9, 4); it has also been recently ranked by Sir Frederic Kenyon among the great museums of the world.

The origin of these museums was in the collections of the University of Toronto, and may be traced back to the year 1853 when a chair of natural history was created;

but their present maturity is due to the enthusiasm of the directors based upon the strong support and skilled advice of the late Sir Edmund Walker, who in 1912 became the first chairman of the Board of Trustees. The transition from university collections for teaching purposes to their present character took place gradually after 1900, Mr. Currelly also in the following years contributing the nucleus for the Archaeological Museum, from materials obtained while he was excavating in Egypt and the eastern Mediterranean.

The Museums are under the control of a Board of Trustees appointed, some by the Government of the Province and others by the University, the former having hitherto been chosen from benefactors or those interested in their development; there are also two ex-officio members from the Government. The director of each museum, who determines its essential character, is also a full professor in the University, from which he draws his salary. Similarly the assistant directors hold university positions. The directors constitute an advisory board for the Trustees. The annual maintenance has been assumed equally by the Government and the University, but the cost of the renovations and extensions is being borne by the Government alone.

The original wing was opened by the Duke of Connaught in 1914, but it soon became desperately overcrowded, and in 1930 the additions were begun, the Honourable Howard Ferguson being Prime Minister, Mr. J. B. O'Brian the chairman of the Trustees and Mr. Alfred Chapman the architect.

The Royal Ontario Museum consists of two broad divisions, Natural History and Archaeology. The new building is connected with the old in such a way that the whole is H shaped, that side of the H that faces

Queen's Park Drive being devoted to Natural History and the rest to Archaeology. The entrance hall, stairs, elevators, a large and small lecture room, a refreshment room and other necessary accommodation are all in the new wing. There are four floors, except in the tower where there is additional space in use. The exterior design is akin to the Romanesque or Norman, and was purposely adopted as suitable for a Museum which is housing fragments from earlier civilizations. The stone used was quarried in Ontario, Credit Valley for the field, Queenston limestone for trimming, and Bancroft marble for the rotunda floor, the bases and the openings throughout the galleries. The ceiling of the entrance hall is a Venetian glass mosaic designed and executed in Toronto.

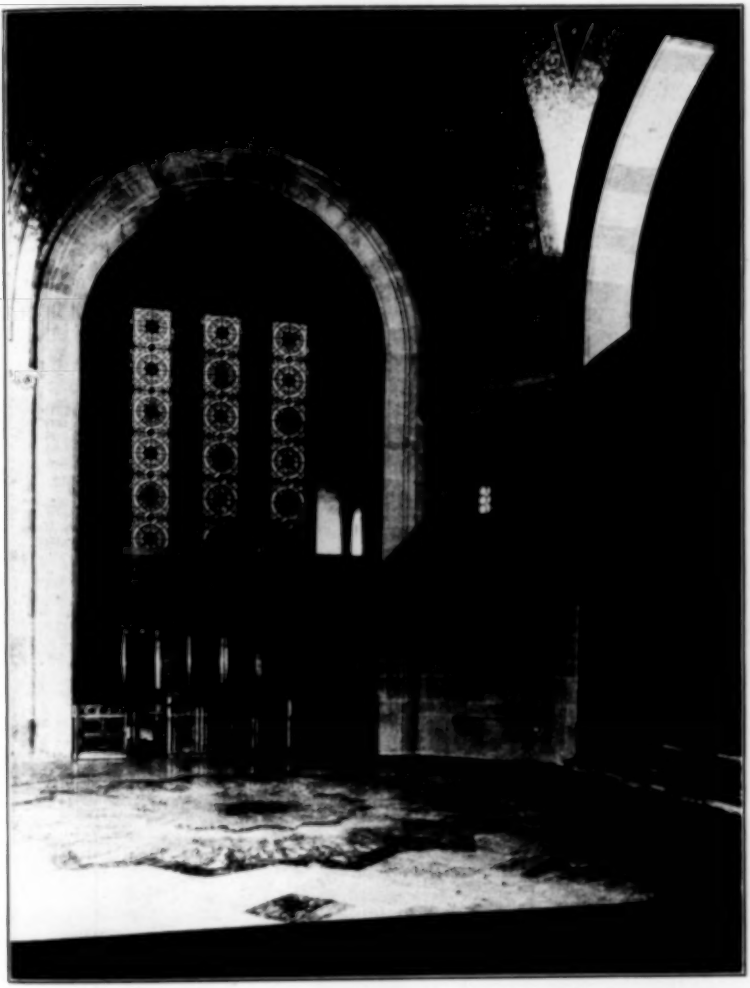
The general principles controlling the design of the galleries, which are the most important part of the building, were the securing of light, flexibility, and maximum unobstructed wall surface for exhibit purposes. The windows, therefore, are as high above the floor as practicable, and the artificial lighting is by fixtures slightly illuminated on the underside so as to diffuse the light over a bay 30 ft. by 20 ft. The octagonal entrance rotunda, 42 ft. in diameter with a ceiling height of 38 ft. is the centre of the plan. On the north and south sides are the entrances to the Natural History Museums, and on the west is a short hall, with staircases on either side, leading to the Archaeological Museum.

The Museum of Mineralogy, entered from the south side of the rotunda, covers 8,497 sq. ft. of exhibit area in one large gallery, together with 2,151 sq. ft. for library, work-rooms and administrative offices, and on the floor below 4,129 sq. ft. for laboratories and store-rooms. The display is arranged effectively as in the great museums of London, Paris and New York, and there are perhaps

fifty tons of material stored systematically for purposes of research and exchange. The work carried on in the laboratories includes chemical analysis of minerals, cutting sections of rocks for microscopic study, grinding, polishing, and photography. The nucleus of the collection dates back to 1894 when it was purchased from Dr. W. F. Ferrier; but the Director, Professor T. L. Walker, assisted by Professor A. L. Parsons, has developed it with such unwearied skill that the known mineral species are now more fully represented here than in most large museums, and this collection probably ranks second or third on the continent in completeness.

Opposite, the Museum of Geology occupies 8,502 sq. ft. of exhibit space divided into two galleries by a partition down the centre line, together with 2,269 sq. ft. for library, work-rooms and administrative offices, and below 4,479 sq. ft. for research laboratories and store-rooms. This museum, of which Dr. A. P. Coleman was the first director, is under Professor E. S. Moore. It is arranged to illustrate features of well known mining districts chiefly in Ontario, with relief maps, mine models, and processes of manufacture. From their natural state to the refined products there are displays of gold, silver, copper, asbestos, coal, building-stones and other material, which make possible comparisons of the products of Ontario mines with those of other parts of the world. While chief stress has been laid on Economic Geology, this museum contains also one of the most complete exhibits of glacial deposits in existence. An effort is also made to show how the strata of the crust of the earth have been formed during the successive geological periods, partly with a view to instruct the layman, partly to interest the specialist.

The Museum of Palaeontology, on the floor above, occupies the whole length of the building, an area of



ROYAL ONTARIO MUSEUM: ENTRANCE HALL

17,547 sq. ft. for exhibits, divided into four galleries, and in addition 5,525 sq. ft. for library, work-rooms, administration and storage, together with 3,300 sq. ft. on the ground floor for preparation and laboratory work. In 1905 Sir Edmund Walker presented his large collection of fossils, with its library, to the palaeontology museum of the University, which was enlarged by the purchase of the Matthew collection of Cambrian fossils; and now through the scientific enthusiasm of the Director, Professor W. A. Parks, there are at least 20,000 species of invertebrate fossils, extensive collections of vertebrate fossils, including twenty-five mounted specimens of dinosaurs, many of which are unique type specimens, ten other large vertebrates, and numerous fishes. These dinosaurs are the result of a succession of expeditions, conducted since 1918 by Dr. Parks and his associates in the Red Deer River district in Alberta and in South Dakota and Nebraska. The vast material is systematically stored and catalogued, conserved ready for research and awaiting completion by additional discoveries.

The Museum of Zoology is placed on the third floor and has an exhibit space of 15,380 sq. ft., 6,678 sq. ft. more for library, storage of research material and administration, together with 4,982 sq. ft. on the ground floor for laboratory and preparation rooms. After the erection of the Biological Building in 1889, Professor Ramsay Wright developed the teaching museum, which grew rapidly until in 1913 it was divided, the portion for general teaching being kept in the University, while most of the Canadian material was transferred to the new museum, where it is now under Professor Bensley, the Director, and Professor Dymond, the Assistant Director. The museum possesses a technical staff for taxidermy, model-

ling, plaster-casting and wax-work. It has probably the most representative collection in Canada of the birds and mammals of the world, though in respect of research contents as to Canadian species the National Museum in Ottawa holds the primacy; but a continuous effort is being made to investigate the incompletely known fauna of Canada. Also there are important facilities for research in entomology and ichthyology. A unique series of coloured replicas of species of Canadian fishes is the outcome of the fisheries research, which is being conducted in co-operation with the University laboratories.

The Museum of Archaeology has all the old, but renovated, building, the connecting cross-bar and the Chinese court, amounting in all to an area of 108,275 sq. ft. for exhibits, and 11,300 sq. ft. for preparation, research and administrative rooms. To the genius of Professor C. T. Currelly, F.S.A., the Director, the character of this great Museum is mainly due. Professor McIlwraith is Keeper of the ethnological section. Warm acknowledgement must be made of the support by those Toronto citizens and other donors, not a few in number, who have proved to be generous "friends" of the Museum. The name of Dr. George Crofts of Tientsin will always be associated with the extensive collection of beautiful objects of Chinese art; and more recently in the same field Bishop White of Honan has been an enthusiastic benefactor.

The great entrance hall, which leads to the old building, is the armour gallery with a moderately good collection of arms and defensive armour both European and Oriental. On the south opens the court containing the impressive tomb of the Chinese General Tsu of the Ming dynasty.

The ground floor contains important and extensive

ethnological material, illustrating by typical objects, usually of artistic merit, the handicrafts of the more primitive races. The Eskimos, and the Indians from Ontario, the Plains and the west coast of Canada are well represented. Great totem poles from British Columbia, excellent pottery from New Mexico and Arizona, specimens of the civilizations of Central and South America, handicrafts of the more primitive races of Africa, Indonesia, and the Pacific Islands are also of much value to art students as well as to ethnologists.

The first floor illustrates mainly European art and archaeology after the Roman period. Here are prints and books, and in a special gallery a small synoptic exhibit of Chinese art from the earliest times to the eighteenth century; here also are the finest Chinese paintings and the great fresco. Then follow galleries of German, Flemish, French, Spanish and Italian art. Then come five galleries of English art.

On the second floor is a large display of pre-historic objects, those from Europe being unusually important, ending with the bronze, gold and earliest iron age. North of these are the grain civilizations of Egypt and Babylon in five galleries. East of the pre-historic room are six galleries of Greek and Etruscan objects dating from the fourth millenium to a little before the time of Christ. Especially worthy of attention in this representative collection are the sculpture (marble and bronze), the Tanagras, and the vases illustrating admirably this important industry. On the west side is the Graeco-Roman collection of objects from private life in Egypt and Palestine to the late Roman and that of Saxon Britain. Near by are musical instruments, then lace and embroideries from Roman to modern times.

The top floor is devoted to the extensive Oriental

collections: seventeen galleries displaying Chinese art from the earliest period almost to the present, three displaying Japanese art and two Mohammedan and Indian.

The directors of these Museums agree as to the purposes to be served by them: The teaching of undergraduate but especially graduate students; the stimulation and assistance of research by assembling, through expeditions or purchase, new material; the storing of valuable specimens which may be very important for the advancement of science, and the enlightment of the public. The collections are, therefore, labelled both scientifically and to meet the needs of the average visitor. Lectures are given, school children are conducted through the galleries by expert guides, and specimens are sent to other institutions of the Province, the cumulative result of which is seen in the rapidly increasing attendance of the public, which in the last year before the closing amounted to 147,000, of whom 30,000 were children.

In Toronto there is also the Ontario Provincial Museum with a very extensive supply of archaeological material, drawn almost exclusively from this Province and indispensable for the study of its remote past, important also for that of north-eastern America. In time much of this material, in so far as it may not be needed for the work of the Normal and other schools, should be transferred to the Royal Ontario Museums.

In this group of Museums in Toronto are found units which serve the same ends as in London are promoted by the British Museum, the British Museum for Natural History, the Museum of Practical Geology and the Victoria and Albert Museum, this last "having come into being to bring art into contact with common life, and to inspire and educate the manufacturer, the craftsman and the wayfaring man." In these Museums the Province of

Ontario possesses an Institution which fulfils excellently the creed of Sir Frederic Kenyon: "I believe in museums as a means for the cultivation and gratification of the sense of beauty; as a source of enrichment of life by widening experience and stimulating curiosity; and as a force that tends to stabilize the life of the community by familiarizing it with its roots in the past. The museum is a means of heightening in value and extending in breadth the individual's conception of life. It gives him ideals of beauty and of human achievement which increase his sense of his own possibilities. Its ultimate purpose is to help the nation to save its soul" (*Museums and National Life*, p. 25).

THE HARD WINTER

EDGAR MCINNIS

LOOK from the window; you can see
How harsh and bitter stands the tree,
The stark gnarled branches lifting black
Against the sullen shifting wrack
Of clouds; and how the first faint snow
Edges the skeleton limbs with white
To make them bleaker still, and slow
The last brown leaf swirls out of sight.
The last leaf and the first snow fall
Together: leaves and leaves were all
It bore us summer and autumn through;
Now even they are gone, and you
And I have dreamed our dreams in vain,
And winter is on us once again.

So there will be no shining rows
Laid in the loft; no fruit to fill
The frosty air with sweetness—rows
Ruddy and amber, guarding still
Their mellowed sunlight; there will be
No laurels at the winter fair,
No profits wrung triumphantly
From chaffering in the market square,
No squandering them on luxuries
To give desire's long ache surcease.
There will be only as of old
To face the hunger and the cold
With bodies never warm enough,
And bellies never quite appeased,

And the same clothes of outworn stuff,
Patched and turned and many-creased,
And always one more bill to pay
Beyond our strength, till every day
Lifts its eternal crucifix
And life is a fire of failing sticks,
An aching weariness at night,
A prowling wind, a flickering light,
A garment with a ravelled seam—
The hard world conquering a dream.

Ah love, it is not we alone
Have seen our fugitive star-dust blown
To nothingness, and felt the stark
Cold tides of fear sweep through the dark.
This is earth's old revengeful thrall—
This is as old as Adam's fall.

Surely it was without distress
Or empty parleying with fate
That Adam faced the wilderness
And looked his last on Eden gate.
At last a man was free to take
His courage into both his hands
And tame an alien soil, and break
The stubbornness of wasted lands.
All the brave world beneath the sun
Welcomed him—how could he foresee
The soaring hopes slain one by one
Till there remained a single tree
To mock him while the summer passed
And then betray him at the last?
He had not felt the iron hand
Of winter laid upon the land

When summer and autumn spent again
Saw all his labour still in vain,
Nor watched the treacherous spring appear
A little less hopefully each year.
Surely it was a splendid thing
That called him forth adventuring,
But life would leave him nothing whole
Except the granite in his soul.

And when each year had etched the trace
Of rugged winter on his face,
And hewn it deep with wind and sun,
One grey day when his youth was done
Would come, half lost, half overheard
The song of some forgotten bird
Suddenly waking sharp as pain
A vision of Eden won again—
Eden before an angry Power
Had cursed the earth with barrenness,
A wealth of flower on perfect flower
Untrammelled by the wilderness,
And in that fair lost paradise
Across the years of discontent
A youth who looked with Adam's eyes
On Eve still eager and innocent
Standing on tiptoe, slim and white,
To marvel at some new delight,
With a whole world to comprehend,
As though delight would never end.

Then as he read in Time's grave eyes
His long inexorable fate
Beyond evasion or surmise,
And stood, heart-sick and desolate,

Would he regret the light disdain
That cast away security
To wander naked in the rain,
And eat the bread of poverty,
And watch old age come down, and grieve
Over the loveliness that was Eve?
Or would he find his soul's reward
More than the bitter price he paid,
And watch Death lift a flaming sword,
And front him, and be undismayed?

O love, O strong and unsubdued,
Out of the fierceness and the strife
We have won through to fortitude
Before the pitiless march of life.
We know the swift unsullied years
That were so confident and fair,
Beyond the shadow of crowding fears,
And failure, and the weight of care.
We know the havens; and we know
The dark and unrelenting seas
Filled with uncharted ebb and flow
And perils and discoveries
Where two who seek an unknown goal
May face the wildest tempest hurled
With soul gripped hard to naked soul,
And stand alone against the world—
The weighted dice, the senseless odds
Of alien and indifferent gods.
This is the fabric of our days,
The rich and seamless garment flung
About our poverty—ah, the bays
Were greener when our hearts were young,
But never more precious could they be

Than withered with the dust and heat:
How should we savour victory
Without the imminence of defeat?

Look from the window—there it stands,
The symbol of our fruitlessness,
But strength is still within our hands,
And courage forged through long duress.
The last leaf and the first snow fall
Over our dreams, and now through all
The winter we are housed with fear . . .
But spring will be another year.

THE MIND OF NEWTON

A. S. Eve

THE idea is common, though false, that the star of Newton has set now that the star of Einstein is in the ascendant. Yet to-day no one pays greater homage to Newton than Einstein himself, nor is there probably any other living man who more fully grasps what may be termed the Mind of Newton. In his *Principia* Newton for the first time laid down those great principles of moving bodies which have ever since been used by man in all his inventions and discoveries. His system of dynamics still pervades all branches of mechanical science, whether in astronomy, engineering, or atomic physics. His system worked, and still holds for the motions of a planet round the sun, provided an attractive *force* exists between the one mass and the other, equal to their product and lessening as the square of their distance apart.

The mechanism of this force however is not apparent, or "observable", and Newton declined to assert any hypothesis as to its cause and nature, above and beyond the above statement. We are accustomed to forces producing motion, as when a horse pulls a cart by traces, or a man shuts a door by pushing it with his hand. Here we have visible, tangible and apparently satisfactory causes. But between sun and earth, or earth and moon, what is the invisible agency of which Newton spoke?

It was not long before many acute minds, including Newton's, saw the difficulty of "action at a distance", and the truly metaphysical character of the force which the *Principia* demanded. Hence the studious efforts of

Einstein to resolve the difficulty and to substitute a geometry of space which would cause the planet Jupiter to go round the Sun in a "natural" path, without the aid of the imaginary force which Newton evoked. But, it will be asked, how does the sun modify space so many hundreds of millions of miles away so that the geometry of space at Jupiter guides it as surely as rails move a tramcar round a curve? And it is supposed that the question is foolish, for this geometry of space *is* the sun, although there must needs be a rather abrupt change in geometry when we enter that region which we, seeing its brilliance, and feeling its radiant heat, are wont more particularly to call The Sun!

What then was Newton's scheme? He knew and accepted the evidence of Galileo Galilei that bodies moving over a smooth horizontal plane swerved aside only when some mechanical force was applied. He knew that "motio" or momentum was added to a body when a mechanical force acted for some duration on the body, and this experience was summarized with the conception that the rate at which the momentum was changed was a measure of the force applied. He added his third great law, for which he gives some credit to Wren, Wallis and Huygens, "the greatest geometers of our times", namely, that "to every action there is always opposed an equal reaction". He not only applied this to cases such as "Press a stone with your finger, the finger is also pressed by the stone", to a horse dragging a stone by a rope, but particularly to those cases when "one body impinges on another". He hung up by strings pairs of round balls of various sizes and materials and making one strike the other found that the momentum (mass times the velocity) lost by one ball was exactly that gained by the other ball. From such humble beginnings, founded however on

actual experiments, putting as it were direct questions to Nature—on such did he build the foundations of his great edifice, which still stands. It will be remembered that Newton's system relates to *bodies*, while Einstein's scheme finds a suitable geometry of the *field* or region between or near the bodies. It is Einstein's ambition to make his field equations include electrical as well as gravitational events.

It is the modern practice to decry the use in Natural Philosophy of any quantities which are not observable. Any other assumed entities, of which we have no experience, smack of metaphysics, or of the supernatural. This wholesome viewpoint has, however, been carried to an extreme. Always we have to form models, diagrams, or more properly mathematical expressions or equations, which will give us a close and accurate description of the events of Nature. These events themselves may be the only real things; all our best efforts give only a rough map, or faint portrait of reality. As long as the events follow faithfully the patterns of our diagrams and equations, and conversely, so far and no further do we know that we are following the path of truth.

Newton has therefore been criticised not only for his metaphysical idea of force, but also for his use of the conceptions of absolute time, absolute space, and absolute velocity when he was himself aware, and also clearly stated, that only relative space, relative time and relative motion can ever be observed by man. Nevertheless the idea of "absolute" is a perfectly legitimate mathematical conception, even if we are not permitted to achieve it in Nature. Any astronomer will understand that he desires a clock which will keep perfect time, and he endeavours to regulate his clock with that ideal. Yet Newton foresaw most of the difficulties for he wrote: "From the

positions and distances of things from any body *considered as immovable* we define all position"; where the italics are mine. But he adds: "Absolute rest cannot be determined from the position of bodies in our regions", and again "Instead of absolute places and motions we use relative ones" for "it may be that there is no body really at rest to which the places and motions of others may be referred". Moreover it is forever impossible to put up any permanent landmark in space so that Newton states: "But because the parts of space cannot be seen, or distinguished from one another by senses, therefore in their stead we use sensible measures of them."

It has been strongly emphasised by Einstein that the genius of Newton gave us a mechanics of Bodies. He dealt with stones and balls, sun, planets, moons, comets and tides. Here is an example from the *Principia:* "Place is a part of space which a body takes up, and is according to the space, either absolute or relative. I say, a part of space; not the situation, not the external surface of the body. For the places of equal bodies are always equal; but their superficies, by means of their dissimilar figures, are often unequal. Positions properly have no quantity, nor are they so much the places themselves, as the properties of places." Perhaps this passage means that "equal bodies" are those of equal mass or weight, and also of equal density, in which case they must needs have equal volumes, whatever may be their shape, while these volumes fill a part of space quite irrespective of their position, which indeed can be defined only with reference to other bodies.

Let us not forget that it was by Newtonian mechanics that the planet Neptune was discovered, its position deduced from the known disturbances it produced on the planet Uranus; and again recently Pluto has been similarly

found by the perturbations which it produced in the path of Neptune. Indeed the mechanics, or dynamics rather, of Newton are fully justified by observational results of extreme accuracy, and where the newer and more logical philosophy of Einstein differs from that of Newton the divergence is so slight that the most determined and searching efforts are essential to prove, or disprove, the anticipated difference between the two theories.

The mind of Newton was directed to the motion of bodies, the mind of Einstein to the nature of the gravitational field. Now it was Faraday who first focused the attention of scientific men on the idea of a "field" or region round an electrified body, or it may be round a magnet. If a current of electricity flows along a wire that is not all that happens, but round the wire with effect lessening with distance, and at all distances, there is a "field", a magnetic field which tends to influence a compass needle. It was Clerk Maxwell who conceived the full mathematical expressions covering the events or happenings in these fields where electric and magnetic displacements tend to occur. So later Einstein turned his attention to the geometrical character of the gravitational field round such a body as sun, earth, or moon, and, finding the key to the geometrical pattern, was able to state those mathematical equations which include the results of Newton, dispense with a metaphysical idea of force, explain a difficulty in the orbit of Mercury, forecast a greater deflection of light passing near the sun, and add a prophecy of displacement towards the red when light, coming from a heavy star, encounters a strong change in gravitational potential. So far the theory finds good support and enthusiastic supporters. In no case will a return ever be made to the position in which Newton left his mechanics. As to the nature of future changes in the

theory of general relativity no sane man dare prophesy. Let us return, however, to Newton's bodies. It is now known that the most massive of them is full of holes. Ever since Rutherford proved that the bulk of an atom was concentrated in a very minute nucleus, with attendant electrons as satellites, matter has taken on an aspect of extreme tenuity. The "places" held, as it were, sacred by Newton as occupied by matter are for the most part full of emptiness, and the loneliness of an electron in an atom is comparable, size for size, with that of a ship sailing at large in the desolation of the Pacific Ocean. Whereas too we could point with satisfaction at the trace wherewith a horse pulls a cart as a visible medium or cause, we know to-day that the leather trace is not a continuous body but a disconnected series of protons and electrons, far apart as compared with their size, again acting on each other at a distance, or by virtue of the electrical field which exists between them.

As a business man Newton showed his ability and clarity of mind by his reforms of the currency when appointed Master of the Mint. The ratio of gold to silver had in actual value diverged from the ratio of the corresponding values of the gold and silver coins, both of which were then (as they are not now) legal tenders. Modern bimetallists will do well to ponder over his problems and his solution, for those who sow the wind of a fixed ratio of gold to silver, whether coins or bullion, will assuredly reap the whirlwind of financial and industrial confusion.

As a member of Parliament, representing the University of Cambridge, Newton belonged to the large and honourable group of silent members. His one speech, which should be treasured, and repeated in all times and

places, was a request to the Speaker to have a window opened!

There are numerous well known stories of Newton's absent-mindedness, but these are common enough even in the case of men of much inferior ability, and few share the privilege of Newton to voyage "through strange seas of thought alone".

Many great mathematicians and physicists have been attracted both to philosophy and to theology. Newton belonged to an age and community which regarded the Bible as almost literally inspired. What wonder then that the mind which had solved the problems of the motion of the planets should endeavour to throw light on the meaning of the mystical numbers of the Book of Daniel. To-day the date of the writing of this book is well determined, and so far from being prophetic the Book of Daniel deals for the most part with past events, venturing on quite vague forecasts for the future. Newton wrote three books regarded in his own day as of great and equal importance: the *Principia*, his *Optics*, and *Observations upon the Prophecies of Daniel and the Apocalypse of St. John*. The present writer spent a morning in the National Library at Edinburgh poring over a quarto edition of the Prophecies, published in 1735. It was a most learned work, of portentous dullness, and to-day quite valueless. What a contrast to the vitality of the *Principia* and *Optics*!

His letters to Dr. Bentley, on the other hand, remain of great interest. In his second letter he writes:

"You sometimes speak of Gravity as essential and inherent to Matter. Pray do not ascribe that Notion to me; for the Cause of Gravity is what I do not pretend to know and therefore would take more Time to consider of it."

In spite of Einstein's great advance to a geometrical ideal, we still need "more Time to consider of it."

He returns to this question in the third letter to Bentley, writing:

"That Gravity should be innate, inherent, and essential to Matter, so that one Body may act through another at a Distance through a Vacuum without the Mediator of anything else, by and through which their Action and Force may be conveyed from one to another is to me so great an Absurdity, that I believe no Man who has in philosophical Matters a competent Faculty of thinking, can ever fall into it. Gravity must be caused by an Agent acting constantly according to certain Laws; but whether this Agent be material or immaterial I have left to the Consideration of my Readers."

Perhaps to-day we should say that gravity is inevitable and inherent in the very character and geometry of space, but why space has that character and that geometry remains no less "left to the Consideration of my Readers."

Finally, it is no small reproach to England, to all Anglo Saxons, and, indeed, to the whole scientific world, that we have to-day no complete collection of the works of Newton and that much material remains unpublished. Other nations have produced complete editions of the labours of their great men. Perhaps there is some hesitation to lay bare the temporary cloud, due to overwork, which strained the brain of this unique man, perhaps it is not desirable to retrace the steps in the controversy with Leibnitz wherein Newton showed to no great advantage in fact or in generosity. Nevertheless, we have seen Victoria and Washington discussed by formidable critics with the result that their glory has been increased and their lustre not diminished. No less will the mind of

Newton predominate in the world's history when a larger knowledge of its splendour is revealed.

In particular the homage of Newton to the Creator and Sustainer of the Universe must not be forgotten, as when he writes "*He* endures forever and is everywhere present, and by existing always and everywhere, he constitutes duration and space. Since every particle of space is *always* and every indivisible moment of duration is *everywhere*, certainly the Maker and Lord of things cannot be *never* and *nowhere*."

THE AUGUSTAN "MOBILITY"

W. L. MacDonald

The first Objects that lay within our Observation were the Quality . . . Strutting round their Balconies in their Tinsey Robes and Golden Leather Buskins looking with great Contempt upon the admiring *Mobility*, gazing in the Dirt at our *Ostentatious Heroes* (Ned Ward).

THE vagueness in the use of the term "Augustan Age" makes some sort of demarcation necessary at the outset. Taking into account one historian of English literature and another, "Augustan" has been made to include Spenser and Blake, who are separated by two full centuries. Frequently the term is made vaguely synonymous with the "Classical Age", the "Age of Reason", and applied to the whole "eighteenth" century from Dryden to Cowper. Since the word inevitably implies associations with the Augustan Age of Roman literature, the question arises, what period of the eighteenth century corresponds most nearly with the age of Virgil and Horace? Various considerations, too numerous to mention here, make it apparent that the age of Pope is richer in parallels than any other; and the period from 1700 to 1744, or roughly, the first four decades of the century, the term of Pope's literary activity, which corresponds almost exactly in extent with the reign of Augustus, is here understood to be the era of the English Augustans.

To set down categorically the characteristics of any age is, in Stevenson's phrase, to court disaster, and yet to distinguish leading qualities is a necessary proceeding in order to secure something like a definition or to

announce a point of view. Provided, then, one keeps in mind the fact that every significant member of any age or any school is an individual with his own temperament and idiosyncrasies, and that among Augustan writers there is perhaps as wide a range of personalities as there is among the Romantics, one may be permitted to make a few generalisations as to the qualities which Augustans possess in common. For the purpose of the present discussion only two features need be emphasised. The vogue of satire notwithstanding, Augustan literature is suffused with a rosy optimism, an insistent smugness, which is perhaps unparalleled in any other age of English letters. Furthermore, the most gifted of the Augustan writers, those who practically monopolised the literary stage, Pope, Steele, Addison, Gay, Arbuthnot (the coffee-house "wits"), regarded themselves as the elect of the nation, and greeted with a supercilious stare intruders into the charmed circle. In this coterie Swift occupies an anomalous position which it is impossible here to define. A necessary corrollary of this intellectual exclusiveness and an almost imperative condition of the invincible complacency of the age was a contemptuous indifference of the *élite* to the conditions of the masses and a resolute disregard of their sufferings.

In general literature the attitude of the Augustans towards the "vulgar" is pretty clearly that of indifference and disdain. They are a part of the human species and thus come just within the horizon of the elect. The doctrine of universal benevolence, that supreme quality of the virtuous man, is the note upon which the *Essay on Man* concludes. This is all very well for men of Pope's class, whose circumstances in life guaranteed an easy competence, and who could therefore view with philosophical detachment the condition of the poor. With

obstinate complacency Pope, the high priest of Augustanism, observes in the *Essay* that all classes are satisfied with their lot; that none would change places with his neighbor, that even "the poor contents him with the care of heaven". Addison congratulates the indigent on disadvantages which find compensation in a more abundant share of Heaven's solicitude. God, says Addison platitudinously, provides for their happiness in the next world; and he ends his message of comfort with a nicely balanced and antithetical sentence: "Thus do they become exalted in goodness, by being depressed in fortune, and their poverty is, in reality, their preferment."[1] Charity, the giving of such superfluities as the "fair sex" will not miss or the rich men will not need[2] is their due; but the giving of alms serves as much to satisfy the conscience of wealth as to allay the anxieties of misfortune. Yet even in this aspect of the case it appears that the middle-classes are more liberal in their response to the call of poverty than are the wealthy nobility;[3] while Pope, rather inconsistently, satirises the church for taking the attitude that the poor are especially blessed in being the Almighty's particular care:

> "God cannot love (says Blunt, with tearless eye)
> The wretch he starves"—and piously denies:
> But the good Bishop, with a meeker air
> Admits, and leaves them, Providence's care.[4]

The "mobility" were a diverting sight for the upper classes at the distribution of the King's Maundy or at Bedlam; they rubbed shoulders with the élite and sometimes with Royalty at the London markets, but always they were the entertainment of the notabilities, excepting when, as shall

[1] *Spectator*, 294. [2] *Spectator*, 294. [3] *Guardian*, 79.
[4] Pope, *Moral Essays*, Epistle III, 103-106.

be mentioned later, they exercised a sinister influence in solving the questions of the hour.

It is possible to demonstrate that social standing is the criterion by which the Augustan historian decides the question as to who call and who do not call for notice. The "vulgar" do not enter into Bolingbroke's conception of history at all, and in this matter Bolingbroke is representative of his class. History has to do with courts and parliaments, and indeed most of her Augustan votaries confine their attention to the party leaders who are near to the sovereign. The "nation", whose welfare is the object of solicitude for every party politician, is at once a very inclusive and a very sharply defined body. Each party in turn anathematised the other for trying to subvert the constitution, which was assumed, perhaps correctly, to embody whatever was good for the "people" in government, church and trade. But the part of the commonwealth which was considered as being really affected by these questions did not extend further down than the upper middle classes, those who by trade and stock-jobbing had made themselves influential in affairs of state. Little sympathy was wasted upon the poor, between whom and the Augustan writers of repute there was a great gulf fixed. In the *New Atalantis*, one of the scandalous memoirs of Queen Anne's reign, Astrea is warned that there is no more place for her amongst the villagers than there is at court; they are even less acquainted with virtue than the aristocracy since they lack the only means by which man is raised above the brute, a generous education. "The rustic soul looks out in native ignorance, cruelty, avarice—the whole ignoble train that fly before the dawn of knowledge and the sweetness of science."[5] Indeed one of the chief differences

[5] *New Atalantis*, 1709, p. 4-5.

between our own and the view of the early eighteenth century as to the objects of historical writing lies in the almost entire absence of the *canaille* from the pages of Augustan annals. Roger North does indeed offer the suggestion that the *Examen* may be styled a "new work" since it is somewhat expansive upon the "brigues" of the people, "which kind of history the critics say is most wanted";[6] but in practice his treatment of the mob is not essentially different from that of his contemporaries; he does recognise them as a factor which has often to be reckoned with in the game of politics. In Bolingbroke and Burnet as in Manley and Grammont the lower classes exist, when they exist at all, only as a chorus whose purpose is to denounce or sanction the political moves of their leaders. The division of history into the "reigns" of various monarchs is much more than a convenient demarcation of time. In the eighteenth century it is a symbol of the dominance of the aristocracy.

This general attitude towards the submerged classes is neatly satirised in Arbuthnot's *Art of Political Lying.*[7] The common people, so runs his argument, have a right to truth within the family and generally in the domestic relations, but they have no right to political truth. They might as well pretend to the titles, privileges and possessions of the nobility as claim the right to know what is really going on within the political sanctum. The fine "Art" of politics in fact consists in persuading the people to swallow state falsehoods for the general good.

One of the reasons for this attitude is probably to be found in the fact that during the earlier decades of the century, the condition of the laborers, especially those in London and the larger towns, seems to have been

[6] *Examen*, Preface.
[7] Published 1712. *Life and Works of John Arbuthnot*, ed. Aitken, p. 95.

relatively good. The records are contradictory, but on the whole Defoe's repeated statement that the lot of the English laborer was better than that of masters and employers on the continent, seems to be pretty well substantiated.[8] As a result of these comparatively easy circumstances, the servant classes became, so it was charged, unduly "saucy" and independent, "the plague of the nation", who were "not to be corrected or even spoken to"[9]; and yet the complaint is heard that few nations are more burdened with their poor. The upper and middle classes must doubtless have felt some satisfaction in being able to deny responsibility for the destitution of the masses and to lay the blame upon the doorstep of the poor themselves. These considerations help to explain, if they do not condone, the unsympathetic attitude of writers who were not much concerned with the social uplift of the lower classes.

In writings, which, if not historical in any strict sense, have at least a political tendency in that they deal with arguments and points of view that influenced legislation designed to ameliorate the condition of the poor, the same lack of sympathy, not to say positive disdain, is manifest. Especially is this the case when the proposed laws tend in any way to cut across the interests of the trading classes. Mandeville's *Essay on Charity and Charity Schools*[10] is a frank and forcible argument against the efforts of sentimentalists which correspond to modern "up-lift" measures. Postulating his Hobbesian heresy that those who give to Charity Schools do it out of self-love so that they may be seen and heard of men, Mandeville goes on to demonstrate that as the nation needs laborers to build roads, dig canals, and reclaim fens, it is

[8] M. D. George, *English Social Life in the Eighteenth Century*, 1923 ,p. 13-18.
[9] *Ibid.*, p. 17. [10] *Fable of the Bees*, 1727.

folly to give young paupers such a smattering of letters as will only make them dissatisfied with their proper sphere, to the great detriment of trade and of the present prosperity of the "nation", that is, the upper and middle classes. On the other hand he advocates that the poor should be kept ignorant and industrious because thus they will become inured to hardship without knowing that they are hardly used. Only by keeping the servant class intact can the English compete with their neighbors in manufacture and commerce. Superficially Defoe's *Giving Alms No Charity*[11] is the same in tone and drift as Mandeville's *Essay*, though in the last analysis it is honestly designed, like so many other of Defoe's writings, to help the laboring classes. It is, however, a much more forcible pamphlet than Mandeville's first because it advances sounder reasons, and secondly because it does not antagonise by a preliminary paradox. It is addressed to Parliament, which is composed of freeholders like himself, and which, he says frankly, is legislating in the interests of the freeholding classes. The Parliament is now proposing to pass a bill designed to help the poor by establishing manufactures of various kinds in various places. Defoe points out that such legislation would militate against English trade, and thus destroy the chief way of life of the very people in whose interests Parliament proposes to legislate. He then proceeds to show how the real causes of poverty lie in the sloth and "luxury" of the poor themselves. With higher wages than their fellows on the continent enjoy, the English laborers work only as much as is necessary to go on a debauch, completely forgetful of their starving wives and families. Both Defoe and Mandeville, as members of the upper middle classes, frankly assume that trade, the mainstay

[11]1704.

of their own class and therefore of the "nation", is the chief consideration, and that the "people" should be helped to perform their proper function in the nation, namely, to support and to maintain the present satisfactory state of affairs.

But while the aristocracy of letters and middle-class social writers took little account of the interests of the poor, there were not wanting among the people themselves scribes who recorded their annals. And, significantly, these annals increase in number from the beginning of the eighteenth century onward. No less a person than the Poet Laureate speaks frankly as one of the "vulgar"[12]; but the two representative popular memoirs of the time which had the widest vogue were Ned Ward's *London Spy*[13] and Tom Brown's *Amusements Serious and Comical, calculated for the Meridian of London.*[14] Both of these books scandalised and delighted contemporary readers. In some respects both are fore-runners of the Bickerstaff and Spectator papers in that they recount the experiences and supply the comments of an observer of the manners of the town. London, "Augusta", is the only scene described, but whereas the *Tatler* and *Spectator* deal in the foibles of a society that is pictured in the main as companionable and decent, Ward and Brown are insistent upon what is ugly, low, and sordid in the life of the metropolis. While it has affiliations with the periodical essay, the *Spy* is even more reminiscent of the vagabond literature of the sixteenth and seventeenth centuries, for in the main it pictures only the knavery of

[12]Colley Cibber's *Apology*, Third Edition, 1750, p. 54.

[13]*The London Spy* appeared in 18 monthly folio parts, the first in November, 1698. It was reprinted in octavo in 1703 and twice again within the next three years.

[14]1700. Brown's collected works in three vols. were issued in 1707-8, and seven further editions were printed by 1720. The edition referred to here is that edited by S. L. Heywood, for Dodd, Mead & Co., 1927.

London. Much of the language is foreign to that of contemporary polite society; and so copious is the vocabulary, so racy is the style that the reader is carried along with amused curiosity or good humored reluctance according as he does or does not fully share the author's hearty relish for such garbage. The total effect of the book is that of Urquhart's translation of *Rabelais*. Brown's *Amusements* is very much the same kind of thing as the *London Spy*, with the authorship of which, by the way, he was credited in the inscription upon his tomb. Considering the dates of publication one is rather suspicious that Brown got his idea from the parts of the *Spy* first published, and exploited Ward's scheme before the originator had completed his round of the city. Generally speaking the same kind of people are observed in the two books. Brown, however, interests himself in many places which are the special resorts of the aristocracy, such as the Court, Westminster Hall, Hyde Park and the playhouse, while Ward, frankly confessing his indifference to Drury Lane Theatre and such aristocratic resorts, prefers to turn towards Bartholemew Fair[15] where he can rub shoulders with the "mobility". Brown has the same zest in his unhallowed peregrinations and the same copiousness of expression, but his style is much more polished—much less Rabelaisian. Moreover, the whole work is conceived as a satire: the cynic looks upon the whole world as a diversion. Ward, on the other hand, infrequently forgets the attitude of the interested spectator and faithful recorder.

While the *Spy* and the *Amusements* are primarily memorials of the "vulgar", the only division into classes which the authors make is one which cuts directly through the whole of society, forming on the one hand a group

[15]Parts xi and xii.

of good respectable members of the commonwealth who are relegated to limbo, with their annals for the most part unrecorded, and on the other the worthless and the vicious who absorb the main interest of reader and writer alike. Nobles, clergymen, lawyers, physicians, thieves, fishwives, watermen, all march or lurch across the stage in a grand medley of vice and debauchery, reminiscent of those pictures where the human race is represented in its pilgrimage through Time. Notwithstanding the absence of a specific bond such as the club life which tended to unite the elect of the upper and middle classes into a fraternity of wit and culture, the literature of the period points to the fact that, generally speaking, the "vulgar" as against the aristocracy, formed a fairly homogeneous society. Impoverished artisan and laborer, pauper and thief recognised this much in common, that they lived in a world apart, that when they took the wall of a physician, a bishop, or a nobleman they were asking to be thrown into the kennel, and felt it no particular disparagement to be so treated.

The Olympians dismissed the mob with a grand gesture, the middle classes jealously watched any movement which threatened their own newly established prestige, but the politicians had to take serious account of the "mobility". Some of the *canaille* enjoyed the franchise and the heterogeneous throng often exercised a decisive influence at times of political crisis. But who composed the mob, what were the approximate status and numerical strength of that large part of the nation vaguely spoken of as "the people", are difficult questions to decide.

While contemporary material which throws light upon this complicated problem is not lacking, it must be observed that the records which help most to a solution belong to a period somewhat later than the age of Pope,

to a time when the effects of the industrial revolution had forced the subject upon the attention of all thoughtful writers. But the changes which came over social England during the eighteenth century, as in every century, were gradual, and it is not irrelevent to the problem to note the conditions which prevailed a quarter or even three quarters of a century later. Thus it is worth observing that at the beginning of George III's reign the franchise for the counties of England was comparatively wide, consisting of forty-shilling freeholders with a liberal interpretation put upon the term "freeholder". It has been calculated that in all the English counties there were probably 160,000 actual voters in 1761. This number as compared with a total rural population of about five and a half million appears to be fairly large, but when one remembers that the big landowners were the dominant influence in rural districts, especially when the system of open voting prevailed, it is at once apparent that the effective voting power of those who exercised the franchise was much smaller than their numbers would indicate.[16] The number of voters in the boroughs is less certain, but Namier[17] has calculated that in 1761 the electorate of the parliamentary cities and boroughs of England numbered about 85,000. The elective power of these voters ranged from *nil* in pocket boroughs to an indefinite quantity in the boroughs like Westminster, which in the early part of the nineteenth century had practically universal franchise.[18] But in all cases it must be remembered that the universal system of bribery placed the real electoral power in the hands of those who held the party purse-strings, that is, the moneyed classes.

[16]L. B. Namier, *The Structure of Politics at the Accession of George III* (1929) vol. I, pp. 82-3.
[17]*Ibid.*, p. 102.
[18]Graham Wallas, *Life of Francis Place*, ch. ii.

The range in social status of the electors was naturally very wide considering the widely different bases. In Lewes as in Westminster, the franchise was enjoyed by all householders who paid the poor rates[19]; in another instance the list of voters included "all the Baronets, Esquires and——those called gentlemen, and all the Clergy that voted with us last time".[20] This indicates a relatively high social standing in the voters. So also does the amount demanded in one instance for a single vote (£500). The kind of offices which the candidate and election-agent wished to have at their disposal for the purpose of bribing the electors, points in the same direction. This "patronage" included the disposal of positions for dockyard carpenters, excisemen, clerks, postmasters, commissioned officers in the army and navy, consuls in foreign countries, keepers of seals and even the lord chief baron of the exchequer.[21] On the other hand we hear of the "poor mother's" request in return for her vote[22], the votes of the "poorer sort"[23] who were reported in dire need of money and who therefore had to be paid from time to time to prevent the opposition buying them up, and the case of "T. R.", who asks for money to repair his house, falling into ruins, and who threatens the party agent with the loss of his vote if the money is not forthcoming.

All these voters, whatever their social standing, were politically influential, with the reservations which have already been made. But there are also many references to the "mob" at times of political excitement. Undoubtedly the mob of Queen Anne's time had the same kind of influence as mobs have always had when under

[19]Clarence Perkins, "Electioneering in eighteenth century England", *Quarterly Journal*, University of North Dakota, vol. XIII, no. 2 (January, 1923), p. 106. Deals mainly with an election in 1741.

[20]*Ibid.*, p. 107. [21]*Ibid.*, p. 110. [22]*Ibid.*, p. 111. [23]*Ibid.*, p. 115.

the skilful direction of the demagogue. At the Sacheverell trial the mob, actuated by the clergy of both Dissenters and the Established Church, exercised a powerful influence upon the decision. And Lord Hervey records that on the occasion of Walpole's withdrawing his Excise Bill in 1733 the mob outside the Parliament pressed him and his friends so hotly that several, including Hervey himself, were wounded[24]; and that the same night, effigies of Walpole and a fat woman, representing the Queen, were burned by the rabble. Such commotions provided political capital. Horace Walpole referring either to the former tumult or to a similar incident[25] affirmed that it was a plot to murder Sir Robert by having him trampled to death. The case was so represented in the House, and with such adroitness that sympathy was won for the Prime Minister. Over the affair of the effigies the cry was raised, probably not the first time under similar circumstances, that this sort of mob interference was as destructive of the authority of the Commons as any measure which aimed at advancing the Crown "fomented by the upper sort of citizens and put in practice by the inferior". The composition of such rabbles is the chief concern here.

Mr. Perkins cites a case where voters were so generously supplied with liquor that they got quite out of control. "Mr. Warren had been so liberal of his drink in the morning that not long after he got to his Inn, his own mob grew very troublesome to him, beginning first to plunder the victuals, ale, and wine, then whatever else they could lay their hands on, breaking bottles, glasses, pots, chairs, etc., till at last his friends were forced to send to the mayor and aldermen who were all with me

[24] *Memoirs of the Reign of George the Second*, ed. Croker, 1884, vol. I, pp. 205-06.

[25] *Ibid.*, p. 205, note.

[Mr. Warren's colleague] to come with their constables and quell them."[26] One is not sure whether this rabble was made up of voters or of the indiscriminate throng whose social rank was below that of the electors; probably it consisted of both. But more frequently the social status of the "mobility" was obviously below that of the voters. In the election of 1741 Mr. Perkins points out that the "ringing of bells and the huzzas of the populace" finished the "entertainment" prepared for the voters. He goes on to remark that on festive occasions it was customary to have bonfires with an ample quantity of beer set out for the populace; wine and punch were provided for the more substantial people, but dinner parties were arranged for the voters.[27] Again in the same election an attempt was made to raise a mob for the definite purpose of insulting the Duke of Newcastle's candidate. The affair ended in a fiasco which "made the populace roar with laughter", and the rabble which had been hoped for got no recruits.[28] It thus appears that the "mob" consisted as a rule of the ruder sort of the populace, the proletariate, probably with a liberal infusion of voters, some at least of whom felt very much at home in the company of their undistinguished associates. In the early nineteenth century the status, if not the rôle, of the mob was less equivocal. Especially was this the case with rabbles of Westminster, where, as has been observed, the voters were practically all the freemen of the city. It appears from the description in the poll books that the majority of these voters were artisans or very small tradesmen, and the rest seem to have been in literal truth the ordinary street throng. Francis Place describes with disgust a scene which he witnessed after the election of Lord Percy, son of the Duke of North-

[26]Perkins, *op. cit.*, p. 114. [27]*Ibid.*, pp. 112-114. [28]*Ibid.*, p. 114.

umberland, for Westminster. The servants of the Duke in gorgeous liveries stood on the steps throwing lumps of bread and cheese among the dense crowd of "vagabonds", who eagerly caught the lumps, all the time "shouting, swearing, fighting, and blackguarding". To Place it was a humiliating thought that these people represented the electors of Westminster.[29] Whether this state of affairs was simply a perpetuation of that which prevailed a century earlier has not been determined. Probably with the industrial revolution there had been a gradual merging downwards of the lower classes, and probably also the English "mobility" had learned well some of the lessons taught by the Paris mob of 1789. The chief lesson, that of revolution, they had not thoroughly learned, and their main function at elections in the early nineteenth as in the early eighteenth century was to act the part usually assigned to them on the stage, to cheer or revile according to the mood they were in or the directions they received from the demagogue who pulled the strings.

Judging by the casual way politics are mentioned in the memoirs written by members of the lower classes, one is led to the conclusion that the "mobility" when left to themselves took little interest in either the domestic or foreign policy of the rulers. Hack writers of Grub Street offered their pens, and used them often with good effect in the service of one or other of the parties, but it is remarkable that in memoirs where the masses occupy the centre of the stage there is little suggestion of an active interest of the masses in political questions. There is a consensus of opinion that the politicians are out for what they can get. Cibber observes[30] that since the Revolution the only concern in politics seems to be to find

[29]Graham Wallas, *Life of Francis Place*, pp. 39-40.
[30]*Apology*, p. 53.

enough places to go round, that every ministry since 1688 has been attacked by the "outs" as being utterly incapable. Ward satirises the political coffee-house[31] and Brown speaks of the whole set of politicians as a bad lot, a crew of place-hunters actuated only by self-interest.[32] Furthermore it is on record that Defoe, Ward and Brown were all imprisoned for "political" offences: Defoe stood in the pillory for his *Shortest Way*; Ned Ward pleaded guilty of an attack on the Whig government and the low church party in his *Hudibras Redivivus* (1705), and stood twice in the pillory; Tom Brown was arrested for an indiscreet lampoon on the French king following the Peace of Ryswick (*Satyr upon the French King on the Peace of Ryswick*), but secured a release by addressing a petition to the lords in council in the form of a humorous Pindaric.[33] On the other hand Defoe apparently worked upon the principle that a journalist, being a servant of the crown, was in duty bound to support the government of the day.[34] Ward and Cibber also discover a rude unthinking kind of political loyalty to the constitution. The former speaks throughout with conviction and some force of the benefits of monarchy and the established church, and rails at Cromwell and the Puritans. Considering the fact that Ward was a licensed inn-keeper it is somewhat more than probable that his political "loyalty" was not disinterested. Cibber defends the Licensing Act of 1737 for the reason that, although it was directed against liberty, it was necessary to protect ministers of the crown. This attitude, common enough still and more

[31] *London Spy*, p. 205.
[32] *Amusements ... of London*, 1700.
[33] So at least says the caption over the poem which follows the *Satyr* in Brown's collected *Works* (9th edition, vol. I, p. 61). See also *D.N.B.* under *Defoe*, *Ward*, *Brown*. These offences are mentioned in contemporary histories, *e.g.*, Kennet's.
[34] William Lee, *Life and Newly Discovered Writings of Daniel Defoe*, 1869, vol. II, 40-42.

common then, seems to imply that, as far as the masses were concerned, any sense of democracy which may have flowed from the Puritan revolution was but feebly operative; that questions of political freedom within the scope of the Bill of Rights were left to the jurisdiction of the rulers; that, generally speaking, the political aspirations of the populace of the English "enlightenment" were satisfied by the exile of the Stuarts and the advent of the House of Hanover. The Augustan "mobility" in short accepted without question and without remonstrance the attitude of the rulers implied by Arbuthnot when he defined the Art of Political Lying as the art of "convincing the people of salutary falsehoods for some good end".

ON READING PROUST

L. A. MacKay

THE tenth anniversary of Marcel Proust's death, in November, 1922, suggests a more detached reconsideration of the lasting significance of his work. Earlier and more closely contemporary critics frequently suffered from the disadvantage of having only a portion of that work before them, and being unable to judge it as a whole. Proust did not indeed live to complete the working out of all the later volumes, but enough has been done to make clear the general trend and intention. The whole of the *Recherche du temps perdu* is now available in English; but if one has even a slight competence in French, it is infinitely more valuable to read the original. After the first feeling of strangeness has passed, the difficulties are not excessive. Fifty pages usually suffice to give not only a grasp, but an enjoyment of the style.

It is an open secret that Proust's style is periodic; but it is rather surprising that English readers should object to this. To those whose conception of French prose is bounded on the south by Voltaire, on the north by Anatole France, and on the east and west by the solid phalanx of the Academy, he is naturally a disconcerting and disagreeable phenomenon. The mental effort of holding in suspension until the final phrase sets the keystone, the whole complicated structure of a long sentence in which all the parts are so necessarily and organically interrelated that each has its full significance only in relation to all the rest, is an irritating and it may seem a superfluous labour to one accustomed to the neat and limpid flow of the λέξις εἰρομένη. The essence of the

periodic style is inclusion; of the old French style, exclusion. To gain an adequate breadth of expression for what he wanted to say, Proust was compelled to go back to a current abandoned in French prose since its first tentative springs in the seventeenth century, and to enrich it further with the more ample development of English through Addison, Gibbon, Macaulay, and Ruskin, revealing in the result an entirely new richness, luxury, and flexibility in his native language.

It is in a way an architectural style; not only a study of memory but an exercise in memory. We see the sentence or passage not like a ribbony landscape seen out of a train window, in which one part has disappeared as another comes into sight, but like a definite single landscape, interlocking indeed with others on all sides, but in which we stand and turn our glance about from one point to another in various directions; all the components are always there and always affecting each other and the whole picture, though changing among themselves in perspective as we move among them. To develop the earlier metaphor, such a style is not like a ribbon but like a web of cloth spread out, which we cannot pick up at any point without drawing all the rest after it. Consequently no such style, except to persons of very exceptional capacity, can give its full effect on the first reading; but, on the other hand, it gives the assurance that there will be something worth going back for on the subsequent readings.

Nothing shows more clearly the startling novelty of Proust's style than the frequent comparisons with Saint-Simon. The likeness is about the same as that between Plato and Herodotus, or Ruskin and Sterne. That is to say, they both wrote long sentences, and both in the same language. But it is exactly the important point that is

omitted: the organisation of the sentence. There is in Proust's style something reminiscent of the painters of that Venice towards which his imagination so eagerly strained; his sentence may be as huge and as colourful as a wall-painting of Tintoretto or Veronese, but it has the same rigorous organisation as a framework.

The purpose and intent of the book has been variously and often erroneously stated, as an analysis of the passion of love, or as the picture of the breakdown of society under the influence of the war. Both these things it is, to some extent, and with a certain success, but essentially it is not either of them. Such a mistake might perhaps have been natural enough before the publication of the last volume of *Le Temps Retrouvé*, but now it is critically quite inadmissible. It is true that he has much to say about love, in forms socially accepted and socially condemned; but given the general circumstances of the hero, that is inevitable. The truth is that the central figure, the real hero, in fact, of the work is no person, but the Memory; and Proust, being a Frenchman, when he sets out to write a biography of the memory, could hardly help turning out a Vie Amoureuse de la Mémoire. One must also remember that the years of the hero's life most thoroughly and comprehensively dealt with are those of boyhood, adolescence, and early manhood, when such considerations are naturally most prominent. But there is a more serious reason than that. In a wide and detailed study of the subconscious memory and association, the greatest bulk of material could hardly fail to be supplied by the primary emotions of love and fear, which form the foundation of all individual and personal life. Accordingly we find in Proust an intricate and subtle account particularly of that common ground on which these two meet, that is to say, jealousy. The personal and social

ramifications of these passions are pursued with a clinical absorption and minuteness. His steady unfolding of the successive stages and interplay of passions, with their bewildering and inexhaustible background of conscious and unconscious deceits and half-lies, has something of the horrid attentive fascination of watching an operation in a slow-motion picture, a sort of relentless and intolerable deliberateness. One has the impression of seeing naked nerve fibres handled, inspected, and replaced intact while the spectator watches in such fascinated dread of a slip or accident that he cannot even shiver. And yet on reading further, one sees clearly enough that *l'amour* is not the whole nor even the central interest of the book. Indeed this is just as well, for his analysis of that passion, for all its intricacy of detail, is curiously unsatisfactory in the whole. Why this is so, is apparent in *Albertine Disparue*, when one comes across his deliberate definition of love. He reduces it baldly and formally to "lust plus jealousy". Now this obviously will not do; the phenomenon isn't as simple as all that: and indeed in his treatment of the Albertine episode he has already shown how many other factors of devotion and affection are involved. But with this theory or attitude at the back of his mind, it is easy to see how he could pile up many subtle and intricate observations of detail and yet fail to co-ordinate them into any adequate and complete representation of the whole.

These passions moreover receive special stress partly because the author is dealing with the period of adolescence and youth in his hero, and partly because he has placed him in a section of society so empty and superficial that this is one of the few real interests left; a society whose life is a pitiful round of laborious vanity, paltry vices, and superficial culture; people who have nothing to

stir the sluggish veins of their spirit except the backbiting of an empty arrogance, and a still emptier love-making. But this society is still only a framework; his real interest is elsewhere.

Here, too, an essential classicism in Proust's outlook shows itself; his characters are all and always essentially "social beings". It is only in their relations with other people that they have any real existence. Despite his frequently repeated and indubitably genuine interest in internal phenomena of the mind, it is a significant fact that when his hero retires for some years into the almost complete solitude of a sanitarium, his story becomes merely a gap. It is only in the world of other humanity that his characters have any real being and substance; it is indeed only in contact and conflict with that world that they can win the real and valid joys of communion with their own inner self, not by weakly renunciation and avoidance, but by will and struggle.

As for love, it is worthy of remark that he hardly touches the theme of married love. The only studies of this, which from the scientific point of view is surely a sufficiently distinct species, are the case of Swann, who marries a former mistress, but only after he had ceased to love her, and that of Gilberte, whose husband is killed early in the war after making her life as unhappy as possible by his infidelity and lack of affection—even of common consideration. The completeness of his study along other lines, however, leads him into a very full account of certain perverted and unnatural vices—if indeed one vice may fairly be termed more natural or unnatural than another—certain forms at any rate of generally reprobated actions not indeed unfamiliar in the life about him to any average adult, but which are only beginning to make their appearance in any profusion in

English literature, though the mildest and most delicate of classical writers deal unsurprised with forms of perversion that even Proust did not care to touch. His attitude towards the extremely personal problem of homosexuality is surprisingly, and to some, one gathers, distressingly orthodox. It is possible that this may have been because he knew thoroughly well what he was talking about, and kept his sense of values. Certainly one may not at all accuse him on the ground of morality here, unless one is prepared to accuse the prophets of the Old Testament of conducting a campaign in favour of idolatry and harlotry, on the ground that these words and subjects are perpetually recurring in their denunciations; or labour leaders, missionaries and social workers of crusading for cruelty, oppression, injustice and unhealthy living conditions because many of their public utterances deal with these subjects. No one has ever given a more relentless and soberly convincing picture of the utter ruin such indulgences can bring on people of the highest intelligence, pride, and generosity than Proust has given in his account of the Baron de Charlus. No one has more judicially and devastatingly pricked the specious bubble of historic justification blown around their own preferences by genuine contemporary immoralists than Proust has done in two short paragraphs. But he has the unusual power of being able to detest the sin while feeling only an almost divine pity for the unfortunate sinner: for there seems to be no adequate reason for supposing that he was insincere in this patent condemnation of a vice of which he had such intimate knowledge.

But many would still raise the question: is it necessary or even advisable to mention such matters at all? Proust's answer would be: yes, if one is going to make any honest and serious attempt to see life whole; and if one is not

going to attempt this, it would be better not to attempt to look critically at life at all. At the bottom of his mind seems to lie the conviction that only the true, the good, the beautiful, can bear attentive, prolonged, and honest scrutiny; and there is no other way of showing up the bad, the ugly, in all its deformity. It has been said before.

"Vice is a monster of so frightful mien
As to be hated needs but to be seen."

Yes, but what follows?

"But seen too oft, familiar with her face,
We first endure, then pity, then embrace."

What answer can Proust make to these, the most chilling lines perhaps in all English, or it may be in any poetry, that sum up with such calm and awful brevity the whole life of that unhappy Baron de Charlus, in whom the keenest intellect, and the most delicate taste, the haughtiest pride and the most ample generosity were mocked and devastated by his unnatural passions?

This, perhaps, he would answer, in company with Plato and not a few Christian fathers, that it is but little aid men need to be bad, but all the help and all the intellectual illumination you can give them to be good; they have a terrible facility at finding unaided the level of the worst that is in them. *Facilis descensus Averno.*

Yes, the objection persists: this is all very well for the man of robust character perhaps, but is it wise in a work meant for general and public consumption to deal with such pathological problems? Might not the ignorant or unbalanced reader, like the young medical student, promptly acquire the symptoms of all the diseases he studies, with the added danger that the disease being one of the spirit rather than the flesh, may so the more readily become a real malady?

To this hopeless confession of the inadequacy of

reason, will, right training, or divine aid, of anything in short except a precarious ignorance, to keep men in the right track, there is perhaps no answer except that if we cannot believe in the ultimate value in the universe of such honesty as we can attain, then we are damned indeed, and the shortest way out of life is the best.

One might further say that the ignorant or unbalanced reader is not likely to be equal to the strain of getting very far in Proust; for that does involve a determination to think, and think strenuously: but probably Proust himself would say that if such evil seeds exist in a man's character, in such a world as this it is not ignorance of this book that will crush them down; there is no refuge but in the will. He cannot praise a fugitive and cloistered virtue. The main vice he ascribes to his nameless hero, the central character in whose words the book is written, is that of irresolution and self-indulgence, the weakness that recoils abjectly from the task of thinking things out; the deadly sin of sloth, *accidie*. This is traced directly to an occasion when as a mere boy he permitted his will to surrender to his inclinations and emotions; and at the same time, to complete the catastrophe, it happened that his parents, a sort of exteriorised will, a second chamber, that might ordinarily be relied on to quash idiotic legislation before it became operative, unexpectedly and disastrously capitulated. This stoic deification of the will, united with the gentlest tenderness toward others, is the outstanding characteristic of the most admirable and sympathetic character in the whole book, the old grandmother who dies rather early, but whose unselfish and beneficent influence reflected through an adoring daughter and mother hovers like a kind of guardian angel over all the rest of the book.

Certainly if the obscenity of a work of art is to be

judged by its "exciting" quality, in the restricted sense of that word, then by comparison with such writers as, say Anatole France, we cannot avoid the judgment that these writers, both in intention and result, occasionally are obscene, and Proust is not. His mind and style have in them something of the quality of the dry Egyptian sand; they preserve strangely embalmed and without corruption all manner of precious things, common things, loathsome things, with at once the impartiality of life and the detachment and ordered design of art. Men, mammoths, mosquitoes, dungbeetles, are alike curiously and minutely preserved and fixed in this monumental block of amber.

There is, or was, also another view that regards Proust's work as primarily a picture of a certain stratum of society at a certain time, a sort of Histoire Contemporaine, the thing that Balzac to a certain extent achieved, and Zola, and in one set of volumes Anatole France aimed at. It is this, too, but incidentally, not primarily. Proust disclaims this intention clearly enough in the last volume of the *Temps Retrouvé*, which sets forth at length his own view of his aims and methods. He is not aiming at the portrayal of a novel development and change in society. He says plainly enough that it was not even novel; this sort of thing had always been going on; it was only a forgetful and short-sighted view of the world that failed to notice it. In this connection, too, he has been accused of snobbishness for confining himself mainly to the life of a certain upper range of society.

Undoubtedly he was fascinated, as he shows in his account of the boy his hero, and as anyone of any aesthetic sensibility must be, whether in it or not, and perhaps all the more if not in it, by the romantic spell attaching to a society composed from the accumulated historic glamour

of the old heroic feudal names; but when his hero comes to know personally and familiarly these people that had seemed as remote, superior, and essentially different as a fairy tale, the gilt is off the gingerbread, and the gingerbread itself is a rather sad, soggy, underspiced—or sometimes vulgarly corrupting and overspiced—affair. He is fascinated and intrigued by the very emptiness of this haughty and imposing circle whose only mark of distinction is an inherited and accepted exclusiveness largely just capricious; and even this exclusiveness must be perpetually modified to keep step with changing conditions, or the result is social suicide. Indeed I know of no such completely damning indictment of this superficial life, these wasted people, all the more overwhelming for the scrupulous and sympathetic account of all that can be shown on the credit side. One might easily expect it to be made compulsory reading in Soviet Russia. His treatment of the moral and intellectual qualities of this group, so much inferior as a whole to the individuals that it comprises, and wastes, is positively scathing. If one is to call him a snob, then one must be ready to credit the biologist or bacteriologist with a morbid desire to be an amœba, or a violent attack of typhoid fever.

If then this is a background and the treatment of the passions incidental, where does the main centre and interest lie? In this: the book is really an Odyssey, or a Pilgrim's Progress, of the creative literary intelligence. It is like an embroidered mediaeval garment, in which this factor provides the fundamental shape and stuff of the robe, the treatment of the passions and of society the embroidered design, and the long passages of philosophic and aesthetic reflection the jewels whose emphasis sparkles here and there on the gown. Which is most important and valuable in itself it would be hard to say,

and indeed irrelevant to enquire; they are all necessary to the whole effect. But what is the intention and function of each element is plain enough.

For all the seeming abstractness of his numerous discussions, there is no more concrete writer in the whole of fiction. Put briefly, his attitude is this: things can be known only through experience; the task of the writer of fiction therefore is not to talk about things—this is the mistake of the realist—but to transfer, as far as the unique nature of experience permits, those moments of illumination in which one is not distantly and intellectually remembering, but through some miracle of association actually reliving in all its immediate fulness and freshness, an experience. If it is asked where in this apparently abject dependence on actual, one might almost say historical experience, there is any room left for the creative imagination, a few passages from *Chez Swann*, the first volume of the series, will give in Proust's own words the substance of his artistic creed in this respect:

"Whenever I saw an object, there always remained between myself and it, fringing it with a thin mental barrier that prevented me from ever touching its matter directly, the consciousness that I was seeing it. It was in some sort volatilised before I could make contact with it, as an incandescent body brought towards a moist object never actually touches the damp surface, because there is always a zone of evaporation advancing in front of it.

"All the emotions that the joy or the misfortune of a real person arouse in us are produced only through the intermediary of an image of this joy or this misfortune; the genius of the first writer of fiction consisted in understanding that since in the mechanism of our emotions, the image is the sole essential element, the simplification that

consists in the pure and simple abolition of real persons, would be a decisive step towards perfection.

"A real being, however profoundly we sympathize with him, is to a large extent perceived by our senses; that is to say, remains opaque to us, offers a dead weight that our sensibility cannot lift. Should misfortune strike him, it is only in a small part of the total notion we have of him, that we can be moved: indeed it is only in a part of the total notion he has of himself, that he himself can be moved. The happy discovery of the fiction writer was the idea of replacing these parts that are impenetrable to the spirit, by an equal quantity of immaterial substance, that is to say, substance that our mind can assimilate. What does it matter after that, that the actions, the emotions of these beings of a new species may appear to us as true, since we have made them ours, since it is in us that they are produced, since they hold under their control as we turn the pages of the book feverishly, the rapidity of our breathing and the intensity of our gaze. And once the writer has put us in this state, in which as in all purely subjective states all emotion is multiplied tenfold, wherein his book disturbs us like a dream,—but a dream much more clear than those we have during sleep, and one whose memory will last longer, then he lets loose in us during an hour all possible happiness and suffering, emotions such that it would take years of our life to know only some of them, while the most intense would never be revealed to us, since the slowness with which they are produced deprives us of the perception of them. (So our own heart changes in life, and that is our worst sorrow; but we know this sorrow only in reading, in imagination; in reality the heart changes, as certain phenomena of nature occur, so slowly that even if we can note succes-

sively each of its different states, yet we are spared the sensation of the change.)

"If we have the feeling of being always enclosed by our mind, it is not like an immobile prison: rather we are as it were carried off with it in a perpetual striving to pass beyond it, to get outside it, with a sort of discouragement, hearing always about us this unaltered sonority that is not an echo from without, but the resonance of an internal vibration.

"We seek to find again in external objects which have become precious for that reason, the reflection that our soul has projected upon them, and we are disillusioned as we note that they seem devoid in nature of the charm that they owed in our thought to the proximity of certain ideas. Sometimes we convert all the forces of the soul into cleverness, into splendour, in order to act upon other beings that we know well are situated outside us where we can never reach them."

The extent to which Proust was affected by modern philosophic and psychologic thought is a large study in itself, with the names of Bergson and Bourget especially important. But there is an earlier philosopher whose comparison will, in my opinion at least, throw perhaps a clearer light on the fundamental framework of Proust's thinking than any other.

I mean, as perhaps the reader has already guessed, Leibnitz. The characteristics of the Leibnitzian monad are, briefly, these: each one is a complete and independent being, on its own plane of perception, a unique representation or reflection of the whole universe from a certain point of view, if I may be pardoned the spatial metaphor, developing itself spontaneously in accordance with its own inner principle, in harmony with, but never in contact, or even communication, with any of the others,

the focus, or rather locus of the lines of force that plot its whole history in relation to the rest of the universe. They are essentially dynamic, not at all spatial, but parcels, so to speak, of pure force, with absolutely no possibility of interaction, no windows for communication, differing in quality alone; their real and individual essence not extension but intension, force—life, in short.

The duty and miracle of the real writer, says Proust, of the writer whose work alone makes any real contribution to the knowledge and true intimate personal happiness of humanity, is to perform the impossible, and by some incredible and divine creative sleight of hand, place his reader for the moment inside such another monad, identifying him with it in that ultimate state of unquestionable and immediate knowledge and participation where knowing and being are indistinguishable, where knowing is being, and the knower assimilates the known completely into himself. But to this Platonic idea of the reader's knowing, Proust seems to add the thought, which brings him into contact with Croce, that the thing read can never be thoroughly understood or completely savoured in all its possibility of pleasure, till the reader, after absorbing, in some sense recreates it for himself, since only thus can he adequately recapture the emotion or idea that prompted expression in these words, sounds, or colours: only thus can he hope to get at all close to the thought, the purpose, that is half concealed and half revealed behind the medium. It must be remembered, of course, that these two actions, of assimilation and recreation, are separated only logically and in thought, not in fact or chronologically; the enjoyment, too, is simultaneous with these. Nor does one need to have the same technical knowledge and skill as the original artist to appreciate his work: but one must have some indispen-

sable minimum of knowledge of the general aim and purpose of his technique, the limitations and possibilities of his medium, to put one on the right track in seeking his essential thought.

The proper task of a writer worthy of the name is, then, to produce a work characterized by such hard-thought and untiringly attained essential clarity and adequacy of vision and realization that it will be possible and worth while for the reader to perform his part of the process on the material submitted to his attention. A hard task, an impossible task, perhaps? But a necessary one, Proust insists, indeed the only adequate one.

So far as I know, Proust mentions Leibnitz by name in only one place, a reference to the distinctive quality of the Guermantes salon; but in the following passages you will see not only the plurality of qualitatively different monads that make up the total artistic appreciation of the universe, but the insistence on the essentially contingent nature of the perceived world, which is only one among an infinite number of possibles. It must be understood, of course, that I am not trying to make out that Proust's book is merely a treatise of Leibnitzian philosophy cast somewhat coquettishly into the form of a novel: what I mean is rather that there is a striking and helpful analogy between Leibnitz's attitude to problems of physics and Proust's attitude to aesthetic problems. But it is only an analogy, at best a parallelism, not by any means an equation or an identity.

I quote again from Proust:—

"Thanks to art, instead of seeing a single world, our own, we see it multiply itself, and we have at our disposal as many worlds as there are original artists, worlds more different one from another than those that roll through space, worlds that centuries after the extinction of the

Rembrandt, the Vermeer, or whatever sun it be that gave them birth, are still sending us their own individual ray."

To effect this purpose, the attitude of mind in which the artist must approach his work is not, as I have said, that of the coldly discursive intellectual remembering, but something more vivid and vital, a real experience—not necessarily, of course, related to objective things: in fact, it is only in its subjective aspect that the writer himself can adequately know this permanent and living quality; so that often a work of the pure imagination is more effectively real in this sense than any cold and unassimilable fragment or account of factual occurrence.

"The only way", he says, "to know completely this material of true art is to seek it, where alone it exists, inside oneself. The ideas formed by the pure intelligence have only a logical truth, a possible truth, the choice of them is arbitrary. The book whose characters are embodied in us, not traced by us, is our only true book. Not that the ideas that we form are incapable of logical justification; only we do not know that they are true. Only the impression, inadequate as its matter, improbable as its trace may seem, is a criterium of truth, and on that account it alone deserves to be apprehended by the spirit, for it alone is capable, if it can disengage this truth, of developing it to greater perfection and endowing it with pure joy. The impression is for the writer what experiment is for the scientist, with this difference, that in the scientist the work of the intelligence precedes, and in the writer comes after. What we have not had to decipher, to clear up by our own personal effort, is not ours. From ourselves comes only what we draw from the obscurity which is in us, what others do not know."

So he places all extraneous considerations, of whatever kind of propaganda, that may distract the writer from the

pursuit of the purest and most impartial truth, along with the deliberately external and impersonal description of the realist, outside the true province of art, considering them due in part at least to a misconception of the true artist's aim, and to the unconscious frailty of the human spirit in refusing to face the terrifically strenuous task of seeking and clarifying this kind of illumination. "The artistic sense," he says elsewhere, "that is to say, submission to the internal reality." And again, he makes an objection particularly valid against such schools as elevate superficiality to a metaphysical dogma, tracing the trivial lines and surfaces of haphazard mental activity:

"The school of literature which contents itself with giving only a miserable tracing of lines and surfaces may call itself realist, but is in fact the farthest removed from reality, the one that impoverishes and saddens us most, for it cuts rudely all communication between our present self and the past, whose essence is retained in these objects, between our self and the future, where this essence entices us to taste it again. This is what art worthy of the name must express, and if it fails, one may still draw from its impotence this lesson, that this essence is partly subjective and incommunicable; but from the very successes of realism there is nothing at all to be drawn.

"But indeed when I attempted to think out what really happens in us at the moment when something makes a certain impression on us, as that day when, as I crossed the bridge over the Vivonne, the shadow of a cloud on the water made me cry 'Zut alors!' leaping for joy, or when hearing a remark of Bergotte, the only apparent sign of the impression it produced on me was this phrase, not at all uniquely suited to the occasion, 'C'est admirable', or when Bloch, annoyed by some trifling

meanness pronounced these words that were not at all appropriate to such a vulgar occasion, 'Qu'on agisse ainsi, je trouve cela même fantastique', or when flattered at being well received by the Guermantes and moreover a little exhilarated by their wine, I could not help saying half aloud, 'All the same, they're charming people; it would be pleasant to pass one's life with them', I perceived that to express these impressions, to write this essential book, the only true book, a great writer has not in the ordinary sense to invent it, since it already exists in each of us, but to translate it. The task and duty of a writer are those of a translator."

It is these moments of irrational and often it may seem inexplicably trifling ectasy that he considers the purest and most valuable pleasure. "This life", he says, "in a sense is present at every moment in all men as well as in the artist. But they do not see it because they do not attempt to throw light on it. Thus their past is encumbered with innumerable photographic negatives that remain useless because the intelligence has not developed them. To recapture our life, and also the life of others: for style is for the writer as well as for the painter not a question of technique but of vision. It is the revelation which would be impossible by direct and conscious means, of the qualitative difference that there is in the way the world appears to us, a difference which, if art did not exist, would remain the eternal secret of each one of us. By art alone can we get outside ourselves, and know what another sees of this universe, gaining thus a view which is not the same as ours and whose landscapes would otherwise have remained as unknown to us as those that there may be in the moon."

Proust's world has a curious relation of correspondence with the actual world, rather than coincidence. Not a

point for point correspondence; relations, values, stresses, in it all are shifted, warped, and twisted in obedience to its own laws and nature in some slight but significant degree. It is as if a second France in another dimension were superimposed on that actual country. The colours are brighter there, and people and things more intense, alive, meaningful and interwoven. If I may pile another metaphor on this ungainly heap that is attempting to express what after all you must feel for yourself by reading, I would borrow an admirable and incredibly useful expression from mathematics, and say that Proust's world is not the real world, but a function of the real world.

Hence the curious feeling that his characters are neither outside real life nor in it. Every one of them is compounded and adapted from real persons; every one of their characteristics we have seen reproduced in some or other of our acquaintances, if our life has been long enough and our experience wide enough: yet the whole creature has a peculiar stubborn and wilful life of his own; but *inside* the pages, an immediate life, part of a self-consistent world, rather than the second-hand derivative life of characters in a journalistic account,—or even in such a writer as Stendhal, say. I mean, you never feel like turning to a history of France or back files of newspapers, to learn more about Norpois, or Cottard, or the Duc de Guermantes; you know that all there is to know, all that could possibly matter, is in the book. But you don't feel like that about Mosca, or Julien Sorel, or the Countess Sanseverina. The difference is one of intention. Stendhal puts you in the audience, Proust on the stage; or better still, Stendhal leads you to a window and bids you look in; Proust puts you right inside the room, if not inside the persons. Person, rather, for he never loses sight of the fact that all these people are being seen

through the limited faculties of one man who has only comparatively few and varying points of contact with each of them, and is continually being compelled to revise his opinions in the light of fresh knowledge and insight into their actions and natures.

Such novel-writing is, as Aristotle says of epic poetry, truer and more philosophic than history, as isolating the essential, the necessary, the typical, the significant, and arranging it in such a way as to bring out the values in their due relationship, getting rid of accidentally disproportionate and irrelevant emphasis, and organizing the brute matter in the light of a single intelligible principle or pattern.

In the formation of his characters he deliberately adopts the incredibly dangerous method of compounding them from a number of persons he has known—on the Aristotelian principle apparently, that "whatever has happened is possible: for otherwise it would not have happened." Yet so completely does Proust unify and vitalize these creations that with all their variety they never for a moment tend to split apart or be more than different aspects of the one individual.

He is fascinated in character by the curious interweaving of the permanent and the impermanent, the atavistic emergences of inherited characteristics as shown in a family or a stock: the servant Françoise and her daughter, Gilberte and her two parents, Swann and Odette, Robert de St. Loup and his uncle the Baron de Charlus. At bottom he seems to hold the Aristotelian view that a man is always potentially what he ever is to be, the whole oak is implicit in the acorn. However the individuals may alter with whom one enters into the various relations of life, one's life will always necessarily, inevitably, fatally, conform to a certain pattern, a certain

regular series of type situations, comparable often to those of another, especially a relative, but in the last analysis peculiar to each individual, a round inescapable by him. The Leibnitzian monad again, of course. No other's presence or action can fundamentally affect this development. It is like the theory of war enunciated in several conversations with St. Loup—the theory of type battles. All human conduct goes that way; stripped to the essentials the main outlines of the situations that compose a life follow certain types. The affair of the anonymous hero—once by an obvious slip, in one of the least finished books, he is referred to as Marcel, but elsewhere in the whole range of volumes he stubbornly sidesteps even the shadow of a name. A queer trick this; obviously he saw the hero mainly as himself, but on account of certain extraneous, imported features of the character, did not wish him to bear his own name. The affair of this anonymous hero with Albertine reechoes with a difference that of Swann and Odette, the development of St. Loup that of the Baron de Charlus, the social advance of Mme. Verdurin, and the consequent gradual eclipse and deterioration of her husband, that of Odette and Swann, the gradual eclipse of Oriane, that of Mme. de Villeparisis.

His favourite way of defining a character is not so much by explicit description as in action, and especially by the method of direct juxtaposition of absolute contrasts, plotting, so to speak, the position of a character by referring it simultaneously to two different extremes—cruelty and generosity, intelligence and vicious indulgence, delicacy and rudeness, with the result that his characters stand out sharply, in bold chiaroscuro, except, of course, those that are too essentially drab to stand out anywhere, like Mme. Cottard; though even the most colorless creatures have their own well-defined actuality.

It is a strong temptation to drift off into reminiscences of the various characters; but in the directory, so to speak, that Charles Daudet has made of them, they total 231, and a good third of these are reasonably intimate acquaintances by the time one has finished the book.

Proust's work is not, of course, perfect: it is perhaps taken for all in all, the greatest novel ever written; yet it is occasionally wordy, rhetorical, *précieux*, lacking in precision and finish. And after all he was not infallible or omniscient; his attitude to life was certainly gravely affected by his physical weakness. But it is only fair to remember that the inferior books, especially *Albertine Disparue* and the first volume of *Le Temps Retrouvé*, show many faults obviously due to lack of revision. But let me give one last warning against hasty accusations of irrelevance during the reading of the first three or four volumes; when one gets farther on one realizes the art wherewith by letting us think things irrelevant, he makes them stick in our mind so that they recur at once to the memory when their importance may be seen in the light of what comes after.

The inadequacy of this brief survey is appalling. My excuse, however, shall be that I was in honesty bound to follow, so far as I might, the example of the master, and instead of retailing a dry bundle of crackling facts, to attempt to recreate the significant experience that knowing Proust was for one reader.

"This is what art worthy of the name must express, and if it fails, one may still draw from its impotence this lesson, that this essence is partly subjective and incommunicable; but from the very successes of realism there is nothing at all to be drawn."

HERRICK: HIS EPIGRAMS AND LYRICS

M. L. S. Lossing

HERRICK'S poetry has been found of very unequal merit: a few of his lyrics have been accepted as among the finest in English, while by Southey and others the coarser lyrics and the epigrams have been dismissed as mere "garbage", and the *Noble Numbers*, the religious verse, has been held inoffensive but puerile and dull. The assumption that two parts of Herrick's work are irrelevant to an understanding of the third is, however, quite inadmissible. If his poetry is considered sympathetically and as a whole, the sensitiveness to physical impressions which results in the "coarseness" of the epigrams will be recognized as the very same quality which brings sensuous beauty into the lyrics, while the *Noble Numbers* will reveal the limitations inherent in the poet's reliance on sense impressions.

The history of Herrick's reputation indicates how the false segregation of part of his work from his main achievement came to be made and how much it has led critics astray.

On its first appearance, in 1648, Herrick's volume the *Hesperides*, which included the epigrams and the *Noble Numbers*, made little stir. Not only was the year itself singularly inauspicious, but the poet, long resident in distant Devonshire, was out of touch with current literary fashions. His notion of poetry had not progressed, if indeed it were under any circumstances capable of progressing, beyond that of the Elizabethans. I do not suggest that he was wholly ignorant or careless of what was

passing in the world of letters; but his sympathy did not extend beyond 'the sons of Ben' to Donne and his school. His opinion of their religious poetry is succinctly expressed:

> To seek of God more than we well can find
> Argues a strong distemper of the mind.

Of this distemper no one ever stood in less danger than the poet of *Noble Numbers*. With the Restoration came new fashions in poetry but no increase in popularity for Herrick. In the anthologies, such as *Musarum Deliciae*, *Witt's Recreations*, and the *English Parnassus*, he was given a minor place. But he was in the process of being forgotten. Omitted from Johnson's great collection of the poets in the next century, he was rediscovered through the instrumentality of John Nichols of the *Gentleman's Magazine:* the issue for June, 1796, contained a short biography and critique. In 1810, Nott published his edition of the *Hesperides*; Maitland's appeared in 1823 and was reprinted in 1825. During the hundred years that followed, interest in Herrick steadily increased and scholarship devoted to him produced at last such works as Moorman's life and his edition of the *Hesperides*. Enthusiasm for Herrick's poetry also increased until a writer in the *Edinburgh Review*, in 1904, could declare that "where Horace reaches perfection he is most like Herrick."

In general, however, nineteenth-century criticism had its very definite reservations to make, and it is to this criticism that we owe the tendency to segregate the more delicate lyrics from the rest of Herrick's output. Southey was markedly hostile: to him Herrick appeared "a coarse-minded and beastly writer, whose dunghill, when the few flowers that grew therein had been transplanted, ought never to have been disturbed"; but these "few flowers"

he found "beautiful and perennial". Much more friendly but similar in its segregating tendency is the comment of a critic in the *Retrospective Review* for 1822: "But forgetting the impurities of our author, and estimating the chaster effusions of his felicitous genius, we do not hesitate to pronounce him the very best of English lyric poets." Henry Morley in his edition omitted, with an apologetic reference to "the change of times", the pieces that "would interfere with the free reading of Herrick in our English homes"; and Mr. Pollard acquiesced in this Dr. Jekyll-and-Mr. Hyde view of the poet by relegating the epigrams to an appendix. Swinburne, enchanted with an "excellence unique and unapproachable" in the lyrics, was, of course, undismayed by the improprieties of the epigrams, but he was deeply troubled by their ugliness; while Henry Morley developed Swinburne's contrast into a theory that the epigrams had been included merely as foils to the lyrics, and that they sprang from the tortured sensibility of an eye dedicated to beauty. These romantics admired the exquisite delicacy of the lyrics: their imagination conjured up from the lyrics a Herrick who could never have written the epigrams. Faced with the epigrams, they did not revise their hypothetical character of Herrick; consequently they not only could not account for the epigrams, but they could not even truly appreciate the lyrics. Their lack of a unified conception of Herrick bound both their hands and their feet.

The absurd nature of this misconception of Herrick's character shows itself effectively in the phrase "saint of flowers". The bust in the original edition of the *Hesperides*[1] must instantly dissipate any suggestion of either a saintly or a floral character. The great hump of a nose, the resolute, even cruel mouth, the keen smallish eye,

[1]Reproduced in Robt. Herrick, *Poetical Works*, edited by F. W. Moorman.

the thick, fighter's neck, are redeemed from the threatened brutality only by an expression at once jovial and urbane. The epigrams would seem the natural expression of such a man: their crudeness and frequent dullness appear only characteristic. It is because of their dullness that M. Delattre has given his opinion of them by turning the epigram *On Prat* against Herrick himself:

> *Prat* He writes Satyres; but herein's the fault,
> In no one Satyre there's a mite of salt.

But if this epigram is as dull as M. Delattre states, he would hardly have chosen it to express his own opinion. It has not the wit of the following epigrams:

> Old *Parson Beanes* hunts six dayes of the week,
> And on the seaventh, he has his Notes to seek,
> Six days he hollows so much breath away,
> That on the seaventh he can nor preach, or pray.

> *Urles* had the Gout so, that he co'd not stand;
> Then from his Feet, it shifted to his Hand:
> When 'twas in's Feet, his Charity was small;
> Now 'tis in's Hand, he gives no Almes at all.

> *Parrat* protests 'tis he, and only he
> Can teach a man the *Art of memory*.
> Believe him not; for he forgot it quite,
> Being drunke, who 'twas that Can'd his Ribs last night.

These are selected from the rather large group of well-turned epigrams. Much of the dullness of other epigrams is deceptive: the humour has been outlawed by time. The wit which owes its point to physical and sexual reference has been outlawed too, perhaps by taste, perhaps by time. These last epigrams are chiefly valuable in em-

phasizing the sensuality of the man; and they are not altogether distinguishable from others which are unsympathetic to suffering:

> *Reape's* eyes so raw are, that (it seemes) the flyes
> Mistake the flesh, and flye-blow both his eyes;
> So that an Angler, for a daies expence
> May baite his hook with maggots taken thence.

> *Sibb* when she saw her face how hard it was,
> For anger spat on thee her Looking-glasse:
> But weep not, Christall; for the shame was meant
> Not unto thee, but that thou didst present.

> Now *Patrick* with his footmanship has done,
> His eyes and ears strive which sho'd fastest run.

These epigrams repel us, not so much by the material as by the way it is treated. It is not an intentional coarseness which prompts this treatment, nor, as Southey suggests, an ingrained coarseness: it is a revelation of Herrick's insensibility to the piteous side of pain and ugliness. His touch lacks the sympathy, the understanding, and the ease which he shows in speaking of flowers, children, and pretty women, in short what M. Delattre calls the picturesque. His attitude is unsympathetic because his horizon was bounded by his physical reception of impression. His sensuousness was only immediate and actual in comprehension; the delicate and keen perception did not serve a reflecting mind. There is no bridge between his consciousness and that of the sufferer. His is what has been called the completely artistic attitude. This lack of sympathy with pain and ugliness tends to encourage mirth (in the latin sense, that is, satire) at the expense of the sufferer. The impersonal quality of the epigrams

relates them closely to their latin prototypes: and in that likeness their direct literary value lies. But their indirect value is greater than the direct: their worth as literature may be dubious; but there can be little debate on their importance in giving light on Herrick's character.

The *Noble Numbers*, we have said, has been a good deal neglected. Mr. Grierson's comment is unusual in its detail: he calls Herrick's religious ideas those of "a child of eight," for he "does not approach God with the earnest pleading of Herbert, the rapt love of Crashaw, or the mystic awe of Vaughan, but with the artless frankness of a child confessing his naughtiness and asking to escape too severe a penalty." The censure is not unmerited, but his religious attitude is the natural result of such a self-centred artistic character's attempting to assimilate the thought and emotion of a religion based on selflessness. Herrick's religion could be no more than formal. The full limitation of his characteristic sensuousness is revealed when he writes poems on a subject to which deep emotion and abstract thought are essential. But to simple, practical minds Herrick's theology was satisfying: his parishioners found it authoritative. Possibly he wrote his *Noble Numbers* with them in mind: certainly the villagers were familiar with many of these poems. A few of these religious poems and the Dean Bourne verses have been kept alive in the village by oral tradition to the present day. Such theology as this must have appealed to Herrick's parishioners:—

> God co'd have made all rich, or all men poore;
> But why He did not, let me tell wherefore:
> Had all been rich, where then had Patience been?
> Had all been poore, who had His Bounty seen?

Like most clergymen of the time, Herrick was a cavalier;

he raised his battle-cry "God and the King" as loyally as any soldier or statesman:

> How am I bound to Two! God who doth give
> The mind; the King, the meanes whereby I live.

This is why he has been called irreligious; this, with his emphasis on the actual rather than the abstract, on sensation rather than thought. Yet it cannot be doubted that Herrick considered himself a religious Christian gentleman, a fact which partially explains the *Noble Numbers*: "He was a Christian, a clergyman and a poet, and therefore he wrote sacred verses." It would be difficult to imagine his writing the *Noble Numbers* had he been a layman. All the forces of his nature would have drawn him other ways. He was sincere rather than intense, sane rather than emotional, fleshly rather than heavenly, and a craftsman rather than a thinker. His healthy contempt for the morbid vagaries of the metaphysical school was instinctive and true to all the aspects of his nature. Compare the naïveté in one of his religious poems with Donne's tortured emotionalism. A more pretentious poem *Good Friday: Rex Tragicus* will illustrate this better than a simpler:

> Put off Thy Robe of *Purple*, then go on
> To the sad place of execution:
> Thine hour is come: and the Tormentor stands
> Ready, to pierce Thy tender Feet, and Hands.
> Long before this, the base, the dull, the rude,
> Th' inconstant, and unpurged Multitude
> Yawne for Thy coming: some e're this time crie,
> How He deferres, how loath He is to die!
> Amongst this scumme, the Souldier with his speare,
> And that sowre Fellow, with his vineger,
> His *spunge*, and *stick*, do ask why Thou dost stay?

So do the *Skurfe* and *Bran* too: Go Thy way,
Thy way, Thou guiltlesse man and satisfie
By Thine approach, each their beholding eye.
Not as a thief, shalt Thou ascend the mount,
But like a Person of some high account:
The *Crosse* shall be Thy *Stage;* and Thou shalt there
The spacious field have for Thy *Theater.*
Thou art that *Roscius*, and that markt-out man,
That must this day act the Tragedian,
To wonder and affrightment: Thou art He,
Whom all the flux of Nations comes to see;
Not those poor Theeves that act their parts with Thee:
Those act without regard, when once a *King*
And *God*, as Thou art, comes to suffering.
No, No, this *Scene* from Thee takes life and sense,
And soule and spirit, plot and excellence.
Why then begin, great King! ascend Thy Throne
And thence proceed, to act Thy Passion
To such an height, to such a period rais'd,
As Hell, and Earth, and Heav'n may stand amaz'd.

The curiously naïve realism in this poem, which approaches that of the miracle plays, is echoed in the simple and charming verses written to Christ as a child, and the lovely *Thanksgiving to God for His House.* But Herrick's simplicity is never the innocence of a child; its charm is in the literalness with which he interprets religion. The treatment of material in these poems is the same as is found in the finer lyrics. And the lack of sympathy with suffering which is so characteristic of the epigrams must have been shown in any consolation he might offer to his parishioners. The lines of *Comfort to a youth that had lost his Love* and *Comfort to a Lady Upon the Death of Her Husband* are pertinent to this discussion.

What needs complaints
When she a place
Has with the race
  Of Saints?
In endlesse mirth
She thinks not on
What's said or done
  In earth:
She sees no teares
Or any tone
Of thy deep grone
  She hears:
Nor do's she minde
Or think on't now,
That ever thou
Wast kind.
But chang'd above,
She likes not there,
As she did here,
  Thy Love.
Forbeare therefore
And Lull asleepe
Thy woes and weep
  No more.

Contrast this with the treatment given the same theme by Poe in *The Raven* and Rossetti in *The Blessed Damosel. The Mad Maid's Song* finds in this quality of emotional insensibility its charm; but here is so little grasp of the strength of emotion that the poem is actively cruel. There is an inhuman quality in the cruelty; it is not cruel from intention or carelessness, but from an almost complete lack of comprehension of the spiritual and emotional values of the situation. Herrick did not see or feel

beyond an appreciation of the actual in fact and the actual in sensation.

Herrick may be said to have achieved a formula for a perfect lyric: he describes a fresh beauty, lingers on it, and in conclusion reflects on its swiftly approaching dissolution. *To Blossoms*, *To Daffadills*, *To Meddowes*, *To Daisies*, *To Violets*, *To Primroses*, *To the Virgins to Make Much of Time*, *Corinna's going a-Maying*, *A Meditation for His Mistresse*, all these are variations on the same "carpe diem" theme. The disposition of material is very conventional; and he found both sentiments and a vocabulary ready to his hand. But if his material is banal it is not dull: for as Lamb has said of love, what may be said has been said so often that one can write nothing but truisms; nevertheless these truisms are natural and basic, and must always make an appeal. The trite material in *To Daffadills* is made fresh by perfection of form:

Faire Daffadills, we weep to see
  You haste away so soone:
As yet the early-rising Sun
  Has not attain'd his Noone.
    Stay, stay,
  Untill the hasting day
    Has run
  But to the Even-song;
And, having pray'd together, we
  Will goe with you along.

We have short time to stay, as you
  We have as short a Spring:
As quick a growth to meet Decay
  As you, or any thing.
    We die

As your hours doe, and drie
Away,
Like to the Summers raine;
Or as the pearles of Morning's dew,
Ne'r to be found againe.

Herrick is far from the romantic poets in such poems as this; how far, a reference to Wordsworth's definition of a lyric would show. Herrick's idea of a lyric is poles apart from Wordsworth's. How slightly he felt can be seen from the epigrams; how little he mulled over thoughts or sensations, abundantly from the *Noble Numbers*. The lyrics offer no evidence to refute the showing of the epigrams and *Noble Numbers*, that Herrick neither felt nor thought beyond a sensuous appreciation of incident. *To Electra* illustrates how much he might make of the tiniest incident:

I dare not ask a kisse;
I dare not beg a smile;
Lest having that, or this,
I might grow proud the while.

No, no, the utmost share
Of my desire, shall be
Onely to kiss that Aire
That lately kissed thee.

The classic perfection of form, and the brilliance of treatment cast lustre on the trifling and conventional idea. The indifference to passion in this poem is not that of a person who may not feel it, but of one who does not value it. The innocence of emotion in the *Hesperides* is that of a craftsman. Herrick plays with emotion because his passion is for form. The turn of a poem, its ease, are immeasurably more important to him than what it says.

A craftsman like Herrick will fashion a thing of beauty from a base metal or a precious, indifferent to its value: he is assured that his work will give value to any metal. Any impression, if it be 'sensed' completely, will lend itself to significant artistic expression. It is this seizure of sensation which gives freshness and spontaneity to the craftsmanship of such poems as this:

> When as in silks my *Julia* goes
> Then, then, (me thinks) how sweetly flowes
> That liquefaction of her clothes.
>
> Next, when I cast mine eyes and see
> That brave Vibration each way free;
> O, how that glittering taketh me!

Here Herrick conforms to the court mode; the crispness and technical ease render him the first of this group. Mr. Grierson gives him a much higher place: "The technical perfection of Herrick's work within its limited range places him as an artist second to Milton only." He is superior in his metrical variety and precision even to Pope. It is curious that his skill never attracted Dryden's attention: one might have expected him to exalt Herrick above the admired Denham to the side of his favourite Waller. Herrick has added to an Elizabethan fervour the clearness and ease of the eighteenth century couplet; he has given us in his songs the freshness and immediate presentation of sensation characteristic of the romantics, yet free from their clouded introspection.

Miss Mitford has said: "The want in these graceful and delicate lyrics is thew and sinew. And yet they are what they pretend to be, airy petals of the cherry blossom, hinting of fruit, bees fluttering and musical, giving token of honey." Any *show* of strength would be out of place

in the lyrics: Miss Mitford has seen none, and not having studied the epigrams and *Noble Numbers* with the lyrics, has concluded that there is no strength in Herrick. Strength in comprehensiveness and completeness of sensation was Herrick's in all his verses. The epigrams lack the porcelain surface of the lyrics; we can judge from them the strength of his sensuousness. This sensuousness is his craftsman's brain; all his senses feed it as they do other men's minds. Where strength should be shown, as in the satires, his appetite for sensation is so greedy, so voracious, as to nauseate those readers who enjoy the lyrics. If Miss Mitford had studied the epigrams sympathetically she must have perceived that the choice of detail *in the lyrics* shows the fineness in the strength of Herrick's sensuousness. The strength and ruggedness of the tree was essential to the development of the blossom; nor can the blossom be considered apart from the trunk and branches which feed it with the same food as they themselves absorb. The same sap maintains all. Southey did not see that it was the same qualities of "filth and ordure", which, changed in form, but not in character, gave the blossom its beauty —its being.

How this quality of sensuousness varies in the *Hesperides* can be indicated by a selection of verses on one subject.

Upon Cuts

If wounds in clothes, *Cuts* calls his rags, 'tis cleere,
His linings are the matter running there.

This epigram may represent the crudest element in the *Hesperides*, the root of Herrick's tree.

Upon some women

Thou who wilt not love, doe this;
Learne of me what Woman is.
Something made of thred and thrumme;
A meere Botch of all and some.
Pieces, patches, ropes of haire;
In-laid Garbage ev'ry where.
Out-side silk and out-side Lawne;
Sceanes to cheat us neatly drawne.
False in legs and false in thighes;
False in breast, teeth, haire and eyes:
False in head and false enough;
Onely true in shreds and stuffe.

This amusingly cynical verse is turned like an epigram; and indeed the whole poem is not more than an elaboration of an epigram.

Julia's Petticoat

Thy Azure Robe, I did behold,
As ayrie as the leaves of gold;
Which erring here, and wand'ring there
Pleas'd with transgression ev'ry where:
Sometimes two'd[1] pant, and sigh and heave
As if to stir it scarce had leave:
But having got it; thereupon,
Two'd make a brave expansion.
And pounc't with stars, it shew'd to me
Like a *Celestiall Canopie.*
Sometimes two'd blaze, and then abate,
Like to a flame growne moderate:
Sometimes away two'd wildly fling;

[1]two'd, for "it would."

Then to thy thighs so closely cling,
That some conceit did melt me downe,
As Lovers fall into a swoone. . . .

This rather intimate love poem is refined from the epigram: but it lacks the impersonal delicacy which affords such satisfaction in *Delight in Disorder:*

A sweet disorder in the dresse
Kindles in cloathes a wantonnesse:
A Lawne about the shoulders thrown
Into a fine distraction:
An erring Lace, which here and there
Enthralls the Crimson Stomacher:
A Cuffe neglectfull, and thereby
Ribbands to flow confusedly:
A winning wave (deserving Note)
In the tempestuous petticote;
A careless shooe-string, in whose tye
I see a wilde civility:
Doe more bewitch me than when Art
Is too precise in every part.

The last couplet bows as it leaves: how different from the slap in the face administered by the last line of the epigram! Such a variation in tone cannot be comprehended unless a unified conception of Herrick's character, derived from all the types of verse he wrote, is admitted. But these selections are bound too closely together by the slightness of material to give more than a hint of the range of Herrick's poems: these may easily seem the work of one man. One may realize how greatly the tone varies by reading first, the epigram *Upon Sudds a Laundresse* and then, *To Blossoms.*

Many critics who admired the lyrics have resented the epigrams and religious poems. This is because they

have not fully understood the purpose of the other verse. Herrick, a master craftsman, has kept closer to the literary character of each type than was believed possible. His epigrams are in the classical tradition, his religious verse for the people: to this is due the rough coarseness of the one, and the simple actuality of the other. Unlike the lyrics, the epigrams are not refined, nor the *Noble Numbers* subtle; their likeness lies in an immediate presentation of sensation. And it is only when we recognize this likeness among the differences that we do full justice to Herrick and the lyrics.

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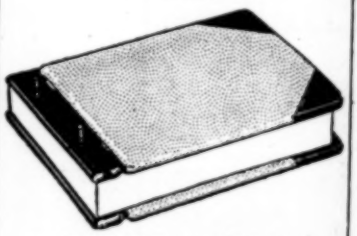

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